IX.H.2. Emission Limitations and Operating Practices (Davis and Salt Lake Counties)(Dated 28 June 1991 and Updated 4 November 1992)

IX.H.2.a General Requirements

2.a.A Stack testing to show compliance with the emission limitations for the sources in this appendix shall be performed in accordance with 40 CFR 60, Appendix A; 40 CFR 51 Appendix M; and Subsection R307-1-3.2.5, UACR. The back half condensibles are required for inventory purposes and shall be determined using the method specified by the Executive Secretary. If after two stack tests are conducted at a particular emissions point under this SIP, it is shown that because of the reliability of pollution control equipment, constant emissions or other appropriate reasons, the stack testing frequency prescribed by these regulations is more frequent than necessary to determine the quantity of emissions, the Utah Air Conservation Committee may reduce the stack testing frequency of any particular emission point in a given year. The following test methods shall be used for the indicated air contaminants:

PM_{10} For stacks in which no liquid drops are present, the following methods shall be used: 40 CFR 51, Appendix M, Methods 201 or 201a plus the back half condensibles using method 202 (when promulgated by the EPA) or by the method specified by the Executive Secretary.

For stacks in which liquid drops are present, methods to eliminate the liquid drops should be explored. If no reasonable method to eliminate the drops exists, then the following methods shall be used: 40 CFR 60, Appendix A, Method 5, 5a, 5d, 5e, or other as approved by the Executive Secretary as appropriate, plus back half condensibles using method 202 (when promulgated by the EPA) or by the method specified by the Executive Secretary. All particulate captured in the back half shall be considered PM_{10}.

The PM_{10} captured in the front half, as determined by the appropriate method acceptable to the Executive Secretary, shall be considered for compliance purposes.

SO_2 Appendix A, Method 6, 6A, 6B or 6C

NO_x	Appendix A, Method 7, 7A, 7B, 7C, 7D or 7E
Sample Location	Appendix A, Method 1
Vol flow rate	Appendix A, Method 2
Calculations	To determine mass emission rates (lbs/hr, etc.), the pollutant concentration as determined by the appropriate methods above shall be multiplied by the volumetric flow rate and any necessary conversion factors determined by the Executive Secretary to give the results in the specified units of the emission limitation.

Notification of the test date shall be provided at least 45 days prior to the test. A pretest conference shall be held if directed by the Executive Secretary. It shall be held at least 30 days prior to the test between the owner/operator, the tester, and the Executive Secretary. The emission point shall be designed to conform to the requirements of 40 CFR 60, Appendix A, Method 1 and Occupational Safety and Health Administration (OSHA) approvable access shall be provided to the test location. The production rate during all compliance testing shall be no less than 90% of the production rate at which the facility will normally be operated.

The limitations for the sources listed in Section 2.2 are expressed in terms of PM_{10}, SO_2 and NO_x. The PM_{10} limitations have been converted to PM_{10} from TSP based upon estimated, but unsubstantiated emissions factors. The emissions data used in this Section are based upon the best data available. Nevertheless, the SO_2 and NO_x emissions limitations are also estimated, but are unsubstantiated calculations, conversion factors and emissions factors. SO_2 and NO_x historically have not been measured in specific stacks resulting in a sparsity of reliable data (i.e., the SO_2 and NO_x emissions inventory and resulting emissions limitations may be too high or low). After this PM_{10} SIP becomes effective and at the first regularly scheduled compliance test in accordance with Subsections R307-1-3.2.5 or R307-1-3.2.6, UACR, the emissions limitations as stated herein will be verified as necessary, and readjusted with the approval of the Executive Secretary. The emissions limitations for PM_{10}, SO_2 and NO_x will be adjusted appropriately once the relationship between the old emissions inventory calculations, stack tests and emissions factors and the new test results are understood and verified. Adjustments may be made, provided the

adjustments do not adversely affect achieving compliance with the National Ambient Air Quality Standards (NAAQS).

An exceedance of the mass emissions rates (lbs/hr.), concentration limitations (grains/dscf), or both for a single point source during compliance testing shall be considered a single violation during the test period. If an adjustment in the relationship between the TSP base limitation and PM_{10} limitations should be necessary at the first compliance test, individual stack test results will not be considered in violation of the PM_{10} particulate emission limitation if the TSP base value is not exceeded. The base TSP value is the TSP value from which the PM_{10} particulate limitation was calculated as per the SIP Technical Support Document or as indicated in this Section.

Following the final establishment of the PM_{10} particulate, SO_2, and NO_x limitations, the new limitations will be used for enforcement where applicable.

2.a.B Visible emissions shall be as follows except as otherwise designated in specific source subsections: Baghouse applications shall not exceed 10% opacity; scrubber and ESP applications shall not exceed 15% opacity; combustion sources without control facilities shall not exceed 10% opacity; fugitive emissions shall not exceed 15% opacity and fugitive dust, refinery catalytic cracking units, and process flares shall not exceed 20% opacity.

2.a.C Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9. For intermittent sources and mobile source emissions opacity observations shall be conducted using a modified method 9 (not all 24 readings for a six minute period required).

2.a.D Compliance with the annual limitations shall be determined on a rolling 12 month total except where specifically exempted or otherwise provided for. Based on the first day of each month a new 12-month total shall be calculated using the previous 12 months.

2.1.E Records of consumption/production shall be kept for all periods when the plant is in operation. Records of consumption/production shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request.

2.a.F These limitations and operating practices shall replace all

language pertaining to particulate, SO_2 and NO_x in approval orders for the listed sources issued prior to the effective date of this Section IX, Part H. All language in the existing approval orders which pertains to other air contaminants shall remain in effect with the approval orders.

2.a.G All installations and facilities authorized by this regulation shall be adequately and properly maintained.

2.a.H Any future modifications to the installation or facilities covered in this regulation must also be approved in accordance with Section R307-1-3.1, UACR.

2.a.I All unpaved operational areas which are used by mobile equipment shall be water sprayed and/or chemically treated to reduce fugitive dust. Control is required at all times (24 hours per day every day) for the duration of the project/operation. The application rate of water shall be a minimum of 0.25 gallons per square yard. Application shall be made at least once every two hours during all times the installation is in use unless daily rainfall exceeds .10 of an inch or the road is in a muddy condition or if it is covered with snow or if the ambient temperature falls below freezing or if the surfaces are in a moist/damp condition. If chemical treatment is to be used, the plan must be approved by the Executive Secretary. Records of water treatment shall be kept for all periods when the installation is in operation. The records shall include the following items:

A. Date
B. Number of treatments made, dilution ratio, and quantity
C. Rainfall received, if any, and approximate amount
D. Time of day treatments were made

Records of treatment shall be made available to the Executive Secretary upon request and shall include a period of two years ending with the date of the request.

2.a.J Annual emissions referred at the end of each subsection of Section IX, Part H are not to be used for purposes of determining compliance unless otherwise specified in source specific sections. No modifications to these sources, which would result in an increase of annual emissions, shall be approved without an analysis of the effect on the PM-10 SIP. These annual emissions shall be used in the determinations required for off-set credit, PSD applicability, and nonattainment area major source reviews. These emissions

are normally what the source is actually emitting annually.

2.a.K "Test if directed," as used in specific source subsection, shall mean test if directed by the Executive Secretary.

2.1.L The definitions contained in Section R307-1-1, UACR (Foreword and Definitions), shall apply to this Section IX, Part H.

2.a.M Petroleum Refineries

A. All petroleum refineries in or affecting the PM_{10} nonattainment area shall for the purpose of this PM_{10} SIP 1) require sulfur removal units/plants (SRU) that are at least 95% effective in removing sulfur from the streams fed to the unit, 2) shall not be allowed to burn liquid fuel oil except during natural gas curtailments and/or as specified in the individual subsection of Section IX, Part H (allowed as a result of trading off other equal amounts of emission reductions), and 3) require the use of low SO_x catalyst emission reduction techniques/procedures (as feasible on fluid Catalytic Cracking units) which shall result in no more than 9.8 kg of SO_2 per 1000 kg of coke burnoff). The streams from the Amine plants and the sour water overhead stripping operations shall be processed in the SRU.

B. The routine turnaround maintenance period (expected every 2 to 5 years for approximately a 15 day period) for the SRU shall only be scheduled for the April through October periods. The projected periods/forecasts for the SRU turnarounds shall be submitted to the executive secretary by the end of the first calendar quarter of each year planned and 30 days prior to the turnaround a notice shall be given to the executive secretary.

C. Compliance Demonstrations.

1) Neither the emissions increase (above normal operations) experienced during the SRU routine turnarounds nor those from process flaring shall be included in the daily (24 HR) or annual compliance demonstrations.

2) Compliance with the maximum daily (24 HR) plantwide emission limitations for PM_{10}, SO_2, NO_x

shall be determined by adding the emissions resulting from the sources listed in the refinery's subsections under the emission cap with those from the listed non-cap sources. The emissions from non-cap sources, excluding those from process flares and sulfur removal units/plants (SRU) during routine turnaround maintenance shall be determined by adding daily CEM measured emissions from the SRU tail gas units to emission estimates for stack tested sources. Estimates for the stack tested sources shall be made by multiplying the latest stack tested hourly amounts times the logged hours of operation for each day. Records shall be kept by the refineries, on a daily basis, of CEM data, fuel gas meter readings, parameters of the used fuel oil, hours of equipment operation, and the calculated emissions. These records shall be made available to the executive secretary or his representative upon request. These records shall be kept for at least one year ending with the date of the request.

3) Any modifications to the metering scheme or changes to the emission factors/equations used by the refineries to calculate emissions must be approved by the executive secretary. It is anticipated that due to the small amount of PM_{10}, SO_2, NO_x emission test results available prior to finalizing this appendix for the PM_{10} SIP, the initial stack testing and emission measurements for two years after the SIP is promulgated by the state may cause a re-evaluation of specific limitations assigned to these sources. As more emission data are available, the emission limitations shall be evaluated by the executive secretary and adjusted, if necessary, based upon the best technical methods and information available at the time. Any adjustments made must be reviewed as to the effect upon achieving and maintaining compliance with the National Ambient Air Quality Standards (NAAQS).

4. Compliance with the annual PM_{10}, SO_2, NO_x limitations shall be determined on a rolling 12 month total. Based on the first day of each month, the previous month's daily (24 HR) emissions (excluding flare and SRU turnaround emissions), as calculated using the specific

refinery emission factors/equations, shall be summed for a monthly total. The annual emissions shall be the summation of the last 12 monthly totals. Records of the monthly and rolling 12 month totals shall be kept and be made available to the executive secretary or his representative upon request. These records shall be kept for at least two years ending with the date of request.

D. Estimated process flaring emissions and SRU routine turnaround emissions were used in the 24 hour and annual demonstration, respectively, of attainment of the NAAQS in the PM_{10} SIP. The flaring and SRU turnaround emissions shall be estimated for each month and be reported as part of the annual emissions referred to in Section IX.H.2.a.J. They shall not, however, be used for compliance purposes.

2.a.N All sources required to comply with the specific fuel (oil or coal) sulfur content limitations contained in this appendix must meet the requirements contained in R307-1-4.2 of the Utah Air Conservation Rules.

2.b. Particulate Emission Limitations (company specific)

2.b.A Amoco Oil Company, - 474 West 900 North, Salt Lake City

1. The installations shall consist of the following equipment:

	Description	Fuel
A.	Crude unit furnace (H101)	Plant Gas
B.	Ultraformer furnace (F1)	Plant Gas
C.	Regeneration gas heater (F15)	Plant Gas
D.	FCCU and CO boiler (ESP)	Plant Gas & Cat Coke
E.	Boiler plant (BP)	Plant Gas & Fuel Oil
F.	Ultraformer compressors (K1's)	Propane
G.	Crude/UFU Flare	Nat Gas
H.	FCCU/Alky Flare	Nat Gas
I.	TLR Vapor Combustor (Standby)	Nat Gas
J.	Sulfur unit tail gas incinerator (SRU)	Plant Gas & Tail Gas
K.	DDU Furnace(s)	Plant Gas

2. The following shall be the basis for SO_2 emissions limitations:

A. Emissions Limitations:

Amoco Oil Company, Salt Lake Refinery's maximum SO_2 emissions to the atmosphere shall not exceed the following:

1) 6.296 tons/day From November 1, through the end of February. Of this total, SO_2 emissions from all sources included under the emissions cap shall not exceed 4.392 tons per day.

2) 7.264 tons/day From March 1, through October 31. Of this total, SO_2 emissions from all sources included under the emissions cap shall not exceed

5.067 tons per day.

The annual emission limitation for SO_2 from all sources shall not exceed 1,964 tons. Of this total, the annual SO_2 emissions from all sources included under the emissions cap shall not exceed 1,370 tons.

B. The following sources shall be included in the SO_2 emissions cap:

Source		Fuel
1)	Crude Unit Furnace (H101)	Plant Gas
2)	Ultraformer Furnace (F1)	Plant Gas
3)	Regen. Gas Heater (F15)	Plant Gas
4)	FCCU & CO Boiler (ESP)	Plant Gas and cat coke
5)	Boiler Plant (BP)	Plant Gas
6)	Boiler Plant (BP)	Fuel Oil
7)	Compressors (K1's)	Propane
8)	DDU Furnaces	Plant Gas

C. SO_2 emissions for the Emissions Cap Sources not equipped with analyzer recorders shall be determined by applying the following emission factors to the relavent quantities of fuel combusted. This shall be performed according to the following:

1) Emission Factors for the various fuels shall be as follows:

natural gas - 0.60 lb/mmscf

propane - 0.60 lb/mmscf

fuel oil - the emission factor to be used in conjunction with fuel oil combustion shall be calculated based on the weight percent of sulfur, as determined by ASTM Method D-4294-89 or approved equivalent, and the density of the fuel oil, as

follows:

(lb SO_2 / kgal) = (density lb/gal) * (1000 gal/kgal) * (wt.% S)/100 * (64 g SO_2 / 32 g S)

The weight percent sulfur and the fuel oil density shall be recorded for each time a fuel oil tank is filled for use. Daily records shall be kept of the amount of fuel oil burned. Fuel oil may be combusted during periods of natural gas curtailment, and at other times as allowed by established refinery limits. The sulfur content of the fuel oil shall be tested if directed by the Executive Secretary.

2) Fuel Consumption shall be measured as follows:

Natural gas consumption shall be determined by meters, which shall be installed if necessary, to measure the total quantity of natural gas delivered to the plant.

Propane consumption shall be determined by meters at the outlet of all propane tanks.

Plant gas consumption shall be metered at the FGD meter.

Fuel Oil consumption shall be measured each day by means of leveling gages on all tanks which feed combustion sources.

3) The equations used to determine emissions for the emission cap sources shall be as follows:

Emission Factor (lb/mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/mmscf) * Propane Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/mmscf) * Plant Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

4) Sulfur Dioxide emissions from sources equipped with analyzer recorders shall be determined

according to the following:

1) ESP stack - Sulfur dioxide emissions from the ESP stack (point source #4) serving the FCCU regenerator and its associated heat recovery (CO boiler) unit shall be determined using a SO_2 continuous emissions monitor (CEM) and measured flue gas mass flow. The portion attributable to plant gas consumed by the CO Boiler (calculated from plant gas meter FR-66 and the H_2S CEM readings) shall be subtracted, since it is already accounted for in the total plant gas contribution calculations.

   Whenever the SO_2 CEM is bypassed for short periods (i.e. CO boiler or ESP emergency bypass, FCCU start up and shutdowns), SO_2 CEM data from the previous three days will be averaged and used as an emission factor to determine emissions from the FCCU.

2) Plant gas - the emission factor to be used for plant gas combustion shall be determined with a continuous emissions monitor which will measure the H_2S content of the fuel gas in parts per million by dry volume (ppmdv). The CEM will be located at the Ultraformer regeneration gas heater (F-15) to measure the H_2S content of the common refinery fuel gas being burned. When the common fuel gas cannot be used in the UFU regeneration gas heater (i.e. SRU turnarounds), supplemental sweet fuel gas will be supplied to the F-15 and the CEM will be used to fulfill NSPS monitoring requirements for this source. Whenever the CEM is not monitoring the common fuel gas (SRU and UFU turnarounds), daily grab samples will be taken of the refinery fuel gas and analyzed for sulfur content. Daily emission factors shall be calculated using average daily H_2S content data from the CEM and/or grab samples. The emission factor shall be calculated as follows:

   (lb SO_2/mmscf gas) = (24 hr avg. ppmdv H_2S) /10^6 * (64 lb SO_2/lb mole) * (10^6 scf/mmscf)/(379 scf/lb mole)

5) Compliance with the daily limitations shall be determined from measurement/calculation of the daily SO_2 emissions from the above listed cap sources. Records shall be kept of all the data sources required to make the appropriate emissions calculations. This would include averaged one-hour CEM readings, meter readings (in appropriate units of measure), and fuel oil parameters (density and weight percent sulfur).

Amoco shall maintain a running daily amount of SO_2 emissions for the purpose of calculating monthly and annual amounts. The data/calculations records shall be made available to the Executive Secretary or his representative upon request and shall include a period of two years ending with the date of the request.

D. Individual Point Source Limitation:

SO_2 emissions limits shall be individually set for each point source not designated as being in the emissions cap. The following Non-Emissions Cap Sources shall be regulated individually for SO_2 at the following emission limits:

Sulfur Plant Incinerator	ton/day	tons/yr
Wintertime	1.904	594
Summertime	2.197	594

E. Stack testing shall be performed as directed in condition number 5 below, and in accordance with Sections IX.H.2.a.A. and IX.H.2.a.M.

Sulfur dioxide emissions from the tail gas of the sulfur plant incinerator shall be calculated from the total mass flow rate of the incinerator stack flue gas, and an on-line Continuous Emissions Monitor.

F. The following sources shall not be regulated for SO_2 emissions, nor shall they be included in the emission limitation totals herein.

1) Crude/UFU Flare
2) FCCU/Alky Flare
3) TLR Vapor Combustor (Standby)

3. The following shall be the basis for NO_x emissions limitations:

A. Emissions Limitations:

Amoco Oil Company, Salt Lake Refinery's maximum NO_x emissions to the atmosphere shall not exceed 2.098 tons per day. The annual emission limitation for NO_x from all sources shall not exceed 638.0 tons.

B. The following sources shall be included in the NO_x emissions cap:

Source	Fuel	Meter	Emission Factor
1) H101	Plant Gas	FR-5	250 lb/mmscf
2) F15	Plant Gas	FR-70	140 lb/mmscf
3) ESP	Plant Gas	FR-66	140 lb/mmscf
4) ESP	Cat Coke	Feed	71 lb/kbbl
5) BP	Plant Gas	FR-303-6	0.067 lb/mmbtu
6) BP	Fuel Oil	Tankage	0.067 lb/mmbtu
7) K1's	Propane		10 lb/mmscf
8) SRU	Tail Gas		stack test
9) DDU	Plant Gas		63 lb/mmscf
10) F-1	Plant Gas	FR-201 & FR-202	0.30 lb/mmbtu

C. NO_x emissions for the emission cap sources shall be determined by applying the emission factors identified in the table above to the quantities or energy content of fuel combusted in the respective sources, as measured by the indicated meters. The emission factors shall be derived and periodically updated with qualified stack testing.

D. Total 24-hour NO_x emissions for the sources included in the emissions cap shall be calculated by multiplying the emission factor for each source by the respective quantity or energy content of fuel or energy consumed, and summing the results for all of the sources. Results shall be tabulated every day, and records shall be kept which include all meter readings (in the appropriate units), plant gas parameters (btu/ft^3 for sources which have emission factors in terms of lb/mmbtu), fuel oil parameters (wt.% S), and the calculated emissions. See section 2.1.M Petroleum Refineries of the General Requirements of this Appendix for compliance demonstration details.

E. Stack testing shall be performed as directed in condition number 5 below, and in accordance with Sections IX.H.2.a.A and IX.H.2.a.M.

F. The following sources shall not be regulated for NO_x

emissions, nor shall they be included in the emission limitation totals herein:

1) Crude/UFU Flare
2) FCCU/Alky Flare
3) TLR Vapor Combustor (Standby)

4. The following shall be the basis for PM_{10} emission limitations:

A. Emissions Limitations:

Amoco Oil Company, Salt Lake Refinery's maximum PM_{10} emissions to the atmosphere shall not exceed 0.310 tons per day. The annual emission limitation for PM_{10} from all sources shall not exceed 113.0 tons.

B. The following sources shall be included in the PM_{10} emissions cap:

Source	Fuel	Meter
1) Crude Unit Furnace (H101)	Plant Gas	FR-5
2) Ultraformer Furnace (F1)	Plant Gas	FR-201 & FR-202
3) Regen. Gas Heater (F15)	Plant Gas	FR-70
4) Boiler Plant (BP)	Plant Gas	FR-303-6
5) Boiler Plant (BP)	Fuel Oil	Tankage
6) DDU Furnaces	Plant Gas	???
7) ESP	Plant Gas Stack Test Cat Coke	

C. PM_{10} emissions for the Emissions Cap Sources shall be determined by applying the following emission factors to the relavent quantities of fuel combusted in each unit. This shall be performed according to the following:

1) Emission Factors for the combustion sources shall be as follows:

plant gas - 5 lb/mmscf

fuel oil - the PM_{10} emission factor for fuel oil combustion shall be determined based on the H_2S content of the oil as follows:

PM_{10} (lb/kgal) = (10 * wt.% S) + 3

2) Daily plant gas consumption for each cap source shall be measured by the respective meters indicated in the table above (or by meters to be

installed as necessary).

Daily fuel oil consumption shall be monitored by means of leveling gages on all tanks which feed combustion sources. Fuel oil consumption shall be allowed during periods of natural gas curtailment, and at other times as allowed by established refinery limits.

3) The equations used to determine emissions for the boilers and furnaces shall be as follows:

Emission Factor (lb/mmscf) * Plant Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

4) Total 24-hour PM_{10} emissions shall be calculated by adding the daily results of the above PM_{10} emissions equations for plant gas and fuel oil to the estimated stack emissions from the ESP.

The daily estimate for ESP emissions shall be based upon the grain loading reported in the most recent compliance stack test. This grain loading rate shall be multiplied by the daily flow rate of the flue gas exiting the ESP/CO Boiler, as measured by the SO_2 monitoring system. Whenever the SO_2 monitoring system is bypassed for short periods (i.e. CO boiler or ESP emergency bypass, FCCU start up and shutdowns), flow rate data from the previous three days will be averaged and used to estimate emissions from the ESP.

Results shall be tabulated every day, and records shall be kept which include all meter readings (in the appropriate units), fuel oil parameters (wt.% S), and the calculated emissions. See section 2.1.M Petroleum Refineries of the General Requirements of this Appendix for compliance demonstration details.

D. The following sources shall not be regulated for PM_{10} emissions, nor shall they be included in the emission limitation totals herein.

1) Ultraformer Compressors
2) Crude/UFU Flare
3) FCCU/Alky Flare
4) TLR Vapor Combustor (Standby)
5) Sulfur Unit Tail gas (SRU)

5. Stack Testing Requirements:

The following point sources shall be tested according to the method and frequency shown below. The provisions set forth in Section IX.H.2.a.A. apply to the testing of these listed sources.

A. Crude Unit Furnace

	Test Method	Frequency
NO_x	7	Every 3 yrs.

B. Ultraformer Furnace

	Test Method	Frequency
NO_x	7	Every 3 yrs.

C. FCC & CO Boiler Stack (ESP)

	Test Method	Frequency
*SO_2	CEM	Continuous
* For Catalyst Regeneration		
*NO_x	7	If Directed
* For Catalyst Regeneration		
PM_{10}	201/201a	Every 3 yrs.

D. Boiler Plant (Fuel gas)

	Test Method	Frequency
NO_x	7	If Directed

E. Ultraformer Compressors

	Test Method	Frequency
NO_x	7	If Directed

F. Sulfur Unit Tail Gas (Incinerator)

	Test Method	Frequency
SO_2	CEM	Continuous

NO_x	7	If Directed

6. Annual emissions for this source (the entire plant) are hereby established at 113 tons/yr for PM_{10}, 2,357 tons/yr for SO_2 (which includes 393 tons for routine sulfur plant down time), and 638 tons/yr for NO_x.

2.b.B Asphalt Materials

1. The installations shall consist of the following equipment located at the site:

   A. Stansteel Model asphalt batch plant serial no. 413, complete with a Standard Havens baghouse Model 21, Alpha Mark V, serial no. 10655

   B. One Loader

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Asphalt plant baghouse (APBH)

PM_{10}	4.79 lbs/hr	0.024	grains/dscf

3. Stack testing to show compliance with the above emission limitations shall be performed for the plant exhaust stack emission point and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see paragraph IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

	Method	Retest Every
Asphalt Plant Exhaust Stack		
PM_{10}	201/201a	3 year

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 220 tons/hr of asphalt
   B. 160,000 tons/yr of asphalt
   C. 9 hours/day
   D. 1800 hours/yr

   Records of asphalt production shall be determined by scale receipts and hours of operation by an operations log.

5. Devices indicating the following operational parameters shall be installed, operable and accessible for safe inspection:

A. Differential pressure across the fabric filter dust collector in inches of water gage (in H_2O)

B. Temperature of the gases exiting the fabric filter baghouse in degrees Fahrenheit (^oF)

C. Asphalt product production in tons per hour

D. Asphalt product temperature in degrees Fahrenheit (^oF)

E. Asphalt oil temperature in degrees Fahrenheit (^oF)

They shall be monitored with equipment located such that an inspector can at any time safely read the output. All instruments shall be calibrated against a primary standard at least once every 90 days. The primary standard shall be specified by the Executive Secretary.

6. The moisture content of the raw aggregate shall be maintained at a value of no less than 4.0% by weight. The silt content of the product shall not exceed 6.0% by weight without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

7. The owner/operator shall use only natural gas as a fuel in the asphalt plant. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR.

8. Annual emissions for this source (the entire plant) are hereby established at 2.7 tons/yr for PM_{10}, 0.1 tons/yr for SO_2, 2.9 tons/yr for NO_x.

2.a.C Asphalt Materials, - 1075 W 1700 S, Screening Plant

1. The approved installations shall consist of the following equipment located at the site:

   A. Screening plant
   B. Radial Stacker
   C. Two loaders
   D. Generator

2. The following operating parameters shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 350 tons per hour of aggregate screen feed rate
   B. 560,000 tons per year of aggregate screen feed rate
   C. 8 hours per day
   D. 1600 hours per year

   Records of consumption/production shall be kept for all periods when the plant is in operation. Aggregate production shall be determined by examination of the records of weigh scale readings which shall be maintained at the plant. The records shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

3. The haul road length shall not exceed 0.25 miles without prior approval in accordance with Subsection R307-1-3.1, UACR. The speed of vehicles on the haul road shall not exceed 20.0 miles per hour without prior approval in accordance with Subsection R307-1-3.1, UACR.

4. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

   A. All screens
   B. All conveyor transfer points

   The sprays shall operate whenever dry conditions warrant or as determined necessary by the Executive Secretary.

   Conditions which warrant operation are defined as any time the applicable opacity limitation is going to be violated.

5. The moisture content of the material shall be maintained at a value of no less than 4% by weight. The silt content of

the product shall not exceed 8% by weight without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

6. The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary.

7. Annual emissions for this source (the entire plant) are currently calculated at 10.2 tons/yr for PM_{10}.

2.b.D Bountiful City Light and Power

1. The installations shall consist of only the following equipment:

   A. 1 - 600 kW Worthington dual fuel engine (engine #1)
   B. 2 - 1,250 kW Superior dual fuel engines (nos. 2 & 3)
   C. 2 - 1,000 kW Superior dual fuel engines (nos. 4 & 5)
   D. 1 - 1,950 kW Cooper Bessemer dual fuel engine (engine #6)
   E. 1 - 110 kW Buckeye dual fuel engine (engine #7)
   F. 1 - 9,750 HP Enterprise dual fuel engine (engine #8)

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. The 9,750 HP Enterprise engine:

1.	NO_x	79.5 lbs/hr	3.70 grams/hp*hr
2.	CO	32.2 lbs/hr	1.50 grams/hp*hr
3.	VOC non methane	15.0 lbs/hr	0.70 grams/hp*hr

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see paragraph IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

   The 9,750 HP Enterprise engine:

		Method	Retest every
1.	NO_x	7	3 years
2.	CO	10	Test If Directed
3.	VOC	25	Test If Directed

   The operating rate during all compliance testing shall be no less than 7,312 horsepower (90% of the production rate at which the facility will be operated).

4. Stack testing to show compliance for the engines listed below to determine NO_x and CO emission limitations shall be performed for the following emission points:

   A. 1 - 7600 kW Worthington dual fuel engine (engine #1)

B. 2 - 1,250 kW Superior dual fuel engines (nos. 2 & 3)
C. 2 - 1,000 kW Superior dual fuel engines (nos. 4 & 5)

D. 1 - 1,950 kW Cooper Bessemer dual fuel engine (engine #6)
E. 1 - 110 kW Buckeye dual fuel engine (engine #7)

These sources shall use natural gas as primary fuel in all fuel burning furnaces, ovens and boilers. Number 2 fuel oil or better shall be used only as a pilot fuel or backup fuel to be used during natural gas curtailments and for maintenance firing. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UCAR. Fuel consumption shall be determined by gas meter readings and oil receiving and inventory records.

B. On the first day of each month a new 12-month rolling total emissions inventory shall be compiled. The inventory shall be based on the previous 12-month rolling total operation and the appropriate emission factors and engine settings for each engine.

The appropriate emission factors, intake manifold pressure, cylinder exhaust temperatures, and pilot rack settings for each engine shall be established for minimum emissions operation through testing using a portable monitoring system or equivalent. The intake manifold pressure, cylinder exhaust temperatures, and pilot rack settings for each engine shall be used whenever the engine is operated.

If the NO_x emissions exceeds 200 tpy for the previous 12 months, the source shall submit a report of the emissions to the Executive Secretary within 30 days. Within 90 days the source shall submit to the Executive Secretary for approval a plan with proposed specifications for the installation, calibration, and maintenance of a continuous emissions monitoring system (CEMS) for NO_x. The CEM shall be on line within 12 months following the approval of the plan.

5. The total power generated shall not exceed 35,990 MW*hr/yr without prior approval in accordance with Subsection R307-1-3.1, UACR:

6. The following operating parameters shall be maintained within the indicated ranges:

A. For the 9,750 HP Enterprise engine:

1. Intake manifold pressure = (% engine load - 34.53)/1.81. The equation is valid for engine loads within the range of 50 to 100% only. The pressure is measured in inches mercury. The allowable variation is 1.0 inch.

2. Pilot oil rack setting: For the left side will be maintained at 6.0 mm and for the right side will be maintained at 7.5 mm. The allowable variation will be plus or minus 0.5 mm.

3. Cylinder exhaust temperature = (% engine load - 551) /-0.51, ^{o}F. for each cylinder. This equation applies to engine loads within the range of 50 to 100% only. The allowable variation will be plus or minus 75^{o}F for each cylinder.

They shall be monitored with equipment located such that an inspector can at any time safely read the output. The readings shall be accurate to within the following ranges:

1.	Combustion air manifold pressure:	0.1 in. Hg
2.	Pilot oil injection rack setting:	0.5 mm
3.	Cylinder exhaust temperature:	5^{o}F
4.	Energy production:	1 MW*hr

7. A. The owner/operator shall use only natural gas as the primary fuel and number 2 fuel oil or better as the pilot fuel in (any of) the dual fuel engines. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR. The sulfur content of any fuel oil burned shall not exceed 0.45 weight percent sulfur as determined by ASTM Method D-4294-89. The sulfur content shall be tested if directed by the Executive Secretary.

B. On the first day of each month a new 12-month rolling total emissions inventory shall be compiled. The inventory shall be based on the previous 12-month rolling total operation and the appropriate emissions factors for the engines. If the NO_x emissions exceeds 200 tpy for the previous 12 months, the source shall submit a report of the emissions to the Executive Secretary within 30 days. Within 90 days the source shall submit to the Executive Secretary for approval a plan with proposed specifications for the installation, calibration, and maintenance of a continuous emissions

monitoring system (CEMS) for NO_x. The CEM shall to be on line within 12 months following the approval of the plan.

8. Annual emissions for this source (the entire plant) are hereby established at 1.06 tons/yr for PM_{10}, 5.97 tons/yr for SO_2, 250 tons/yr for NO_x.

2.b.E Central Valley Water Reclamation Facility

1. The installations shall consist of only the following equipment:

   One 1135 Kw Engine-Generator Set (to generate 38% of power)
   Four 625 Kw Engine-Generator Sets (to generate 62% of power)

2. Central Valley Water Reclamation shall install new engine-generator sets with a clean burn configuration to achieve a reduction in NO_x emissions.

3. Emissions to the atmosphere from the new 1135 Kw engine-generator shall not exceed the following rates/concentrations:

   A. Carbon Monoxide

      1) 2.78 lbs/hr
      2) 2.0 grams/bhp-hr

   B. Nitrogen Oxides

      1) 1.39 lbs/hr
      2) 1.0 grams/bhp-hr
      3) 80% conversion

4. Compliance with the above NO_x, and CO emissions limitations shall be performed as follows:

   A. Two sampling ports for the engine exhaust shall be installed -one placed before the catalytic converter and one after in accordance with 40 CFR 60, Appendix A, Method 1.

   B. Monitor Oxygen content of the exhaust at the inlet to the catalytic converter with a continuous sensor or automatic air fuel ratio controller to maintain optimum catalyst performance. Inlet oxygen content shall be maintained in the range of 1,000 to 5,000 ppmv.

   C. Conduct a monthly evaluation of the catalyst degradation by measuring the appropriate contaminant concentration before and after the catalytic converter(s). The concentration shall be measured using a portable monitor specifically designed to measure the contaminant in the range required to

demonstrate compliance or appropriate stain tube indicators. A hot air probe or equivalent shall be used to prevent errors in the results due to high stack temperatures.

D. The converter outlet concentration of CO shall not exceed 550 ppmv (2 gr/bhp-hr) while simultaneously maintaining a 80% conversion of NO_x. The calculation for NO_x conversion shall be made using the concentrations measured in accordance with paragraph C and as follows:

$$\frac{\text{Inlet concentration - Outlet concentration}}{\text{Inlet concentration}}$$

If the converter is unable to attain this emission limit, the converter catalyst shall be either cleaned or replaced.

E. Submit a quarterly report showing:

1) The raw monthly test data and any trends apparent in the data for the three contaminates

2) Calibrations of oxygen sensors and portable monitors

3) Occurrence and duration of downtime, start-up or malfunction in the operation of the engine or catalyst and corrective action taken

4) Exceedances in the limitations

5) Estimation of excess emissions

F. The quarterly report shall be submitted within 30 days from the last calendar day of the quarter

5. Emissions to the atmosphere from engines without catalytic converters shall not exceed the following rates/concentrations:

A. Carbon Monoxide

1) 17.6 lbs/hr per engine
2) 9.5 grams/bhp-hr

B. Nitrogen Oxides

1) 17.6 lbs/hr per engine
2) 9.5 grams/bhp-hr
3) 2,600 ppmv

6. Compliance with the above NO_x, and CO emissions limitations shall be performed as follows:

A. A sampling port for each engine exhaust shall be installed in accordance with 40 CFR 60, Appendix A, Method 1.

B. Conduct a monthly evaluation of the engine exhaust by measuring the appropriate contaminant concentration. The concentration shall be measured using a portable monitor specifically designed to measure the contaminant in the range required to demonstrate compliance or stain tube indicators. The concentration of each contaminant shall not be more than specified above. A hot air probe or equivalent shall be used to prevent errors in the results due to high stack temperatures.

C. Submit a quarterly report showing:

1) The raw monthly test data and any trends apparent in the data for the two contaminates for each engine

2) Calibrations of sensors and portable monitors as appropriate

3) Values at the time of tests for:
* cylinder exhaust temperature
* intake manifold pressure

4) Daily values for:
* cylinder exhaust temperature
* intake manifold pressure

5) Occurrence and duration of downtime, start-up or malfunction in the operation of the engine and corrective action taken

6) Calculate the emissions for the previous 12 month rolling total using the average measured concentration measured above and appropriate engine operating parameters

7) Exceedances in the limitations

8) Estimation of excess emissions

D. The quarterly report shall be submitted within 30 days from the last calendar day of the quarter.

E. Also, if sulfur content in digester gas is likely to be significant (such that an SO_2 emission limit, or a sulfur content limit in fuel, would be appropriate, as mentioned above), then an SO_2 stack test, or a test for sulfur content in digester gas, should also be required, if such a limit is set.

7. The owner/operator shall use only natural gas or digester gas as fuel in the engines. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR.

8. The following production limits hall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. A total of 13.35×10^3 MW*hr/yr for the three uncontrolled engines.

   B. 5.475 MW*hr/yr for the engine burning natural gas with the catalytic converter

   Compliance with these limits shall be in accordance with Section IX.H.2.a.D.

9. Annual emissions for this source (the entire plant) are hereby established at 0.67 tons/yr for PM_{10}, 3.96 tons/yr for SO_2, 203.7 tons/yr for NO_x.

2.b.F Centrex Corporation (Lone Star Industries, Inc.)

1. The installations shall consist of only the following equipment:

   A. Rotary Kiln #3
   B. Rotary Kiln #4
   C. Rotary Kiln #5
   D. Clinker Cooler #4
   E. Clinker Cooler #5
   F. Clinker Reclaim
   G. Finish Mill
   H. Rail Load-out System
   I. Kiln Dust Tank

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Rotary Kiln #3 Baghouse Vent

1.	PM_{10}	3.4	lbs/hr	0.017 grains/dscf	
2.	SO_2				
	One hour maximum	22	lb/hr	97	ppmdv
	Annual average	14	lb/hr	61	ppmdv
3.	NO_x				
	One hour	98	lb/hr	541	ppmdv
	24 hr rolling avg	70	lb/hr	386	ppmdv
	Annual average	55	lb/hr	304	ppmdv
4.	Kiln feed rate	27	Tons/hr		

   B. Rotary Kiln #4 Baghouse Vent

1.	PM_{10}	4.8	lbs/hr	0.017	grains/dscf
2.	SO_2				
	One hour	28	lb/hr	88	ppmdv
	Annual average	16	lb/hr	50	ppmdv
3.	NO_x				
	One hour	126	lb/hr	498	ppmdv
	24 hr rolling avg	90	lb/hr	356	ppmdv
	Annual average	70	lb/hr	277	ppmdv
4.	Kiln feed rate	34	Tons/hr		

C. Rotary Kiln #5 Baghouse Vent

1.	PM_{10}	5.3	lbs/hr	0.017 grains/dscf	
2.	SO_2				
	One hour	28	lb/hr	88	ppmdv
	Annual average	16	lb/hr	50	ppmdv
3.	NO_x				
	One hour	126	lb/hr	498	ppmdv
	24 hr rolling avg	90	lb/hr	356	ppmdv
	Annual average	70	lb/hr	277	ppmdv
4.	Kiln feed rate	35	Tons/hr		

D. Clinker Cooler #4 Baghouse Vent

PM_{10}	2.6	lbs/hr	0.015 grains/dscf	

E. Clinker Cooler #5 Baghouse Vent

PM_{10}	2.1	lbs/hr	0.015 grains/dscf	

F. Clinker Reclaim Baghouse Vent

PM_{10}	3.6	lbs/hr	0.015 grains/dscf	

G. Finish Mill #1 Baghouse Vent

PM_{10}	1.4	lbs/hr	0.016 grains/dscf	

H. Finish Mill #2A Baghouse Vent

PM_{10}	0.5	lbs/hr	0.016 grains/dscf	

I. Finish Mill #2B Baghouse Vent

PM_{10}	1.1	lbs/hr	0.016 grains/dscf	

J. Rail Load-Out Baghouse Vent

PM_{10}	0.34	lbs/hr	0.016 grains/dscf	

K. Kiln Dust Baghouse Vent

PM_{10}	0.27 lbs/hr	0.016	grains/dscf

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see Section IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

	Method		Retest every
A.	Rotary Kiln #3 Baghouse Vent		
1.	PM_{10}	201/201a	3 years
2.	SO_2	CEM UACR 4.6 Relative accuracy test	1 year
3.	NO_x	CEM UACR 4.6 Relative accuracy test	1 year
B.	Rotary Kiln #4 Baghouse Vent		
1.	PM_{10}	201/201a	1 year
2.	SO_2	CEM UACR 4.6 Relative accuracy test	1 year
3.	NO_x	CEM UACR 4.6 Relative accuracy test	1 year
C.	Rotary Kiln #5 Baghouse Vent		
1.	PM_{10}	201/201a	1 year
2.	SO_2	CEM UACR 4.6 Relative accuracy test	1 year
3.	NO_x	CEM UACR 4.6 Relative accuracy test	1 year
D.	Clinker Cooler #4 Baghouse Vent		
	PM_{10}	201/201a	3 years
E.	Clinker Cooler #5 Baghouse Vent		
	PM_{10}	201/201a	3 years

F. Clinker Reclaim Baghouse Vent

PM_{10}	201/201a	3 years

G. Finish Mill #1 Baghouse Vent

PM_{10}	201/201a	4 years

H. Finish Mill #2A Baghouse Vent

PM_{10}	201/201a	5 years

I. Finish Mill #2B Baghouse Vent

PM_{10}	201/201a	5 years

J. Rail Load-Out Baghouse Vent

PM_{10}	201/201a	Test if directed

K. Kiln Dust Baghouse Vent

PM_{10}	201/201a	Test if directed

The test methods used for PM_{10} shall be 40 CFR 60, Appendix A, and 40 CFR 51 Appendix M, Method 201/201a (see Paragraph IX.H.2.a.A.) and as directed by the Executive Secretary.

The clinker production/processing rate during compliance shall be no less than the rates indicated below:

Kiln #3	12.6 ton/hr
Kiln #4	16.2 ton/hr
Kiln #5	16.2 ton/hr
Clinker Coolers #3, #4, #5	45.0 ton/hr
Reclaim System	45.0 ton/hr
Finish Mill #1	21.6 ton/hr
Finish Mill #2	21.6 ton/hr
Finish Mill #3	21.6 ton/hr
Rail Load-out	67.5 ton/hr
Kiln Dust	4000 dscf/m

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

A. Rotary Kiln #3

1)	14	tons/hr of clinker produced
2)	110,376	tons/yr of clinker produced
3)	24	hours/day
4)	7884	hours/yr

B. Rotary Kiln #4

1)	18	tons/hr of clinker produced
2)	141,912	tons/yr of clinker produced
3)	24	hours/day
4)	7884	hours/yr

C. Rotary Kiln #5 Baghouse Vent

1)	18	tons/hr of clinker produced
2)	141,912	tons/yr of clinker produced
3)	24	hours/day
4)	7884	hours/yr

5. The exhaust gas streams from clinker coolers #3, #4 and #5 shall be routed to the two existing clinker cooler baghouses after passing through the heat exchanger.

6. Fugitive emissions from storage piles and others areas shall be water sprayed as dry conditions warrant to minimize emissions. Records of water treatment shall be kept for all periods when the installation is in operation. The records shall include the following items:

   A. Date
   B. Number of treatments made, dilution ratio, and quantity
   C. Rainfall received, if any, and approximate amount
   D. Time of day treatments were made

   Records of treatment shall be made available to the Executive Secretary upon request and shall include a period of two years ending with the date of the request.

7. Annual emissions for this source (the entire plant) are hereby established at 111 tons/yr for PM_{10}, 200 tons/yr for SO_2, 762 tons/yr for NO_x. These amounts are only in effect if the installation subparts are capable of operating at the time this SIP is approved.

2.b.G Chevron U.S.A., Inc., Salt Lake Refinery, Davis County

1. The installations shall consist of the following equipment:

Source	Description
A. Boilers and Furnaces:	
1)	Boilers #1 and #2
2)	Boilers #3 and #4
3)	Crude Furnaces F-1 and F-2
4)	Crude Furnace F-2a
5)	Crude Furnace F-3
6)	HCC Furnace F-1
7)	FCC Furnace F-21
8)	FCC Furnace F-23
9)	HDN Furnaces F-7110 and F-7130
10)	Reformer Furnace F-1
11)	Reformer Furnace F-2
12)	Reformer Furnace F-3
13)	Alkylation Furnace F-3617
14)	Coker Furnace F-7001
15)	Low Sulfur Diesel Plant Furnaces
16)	Sulfur Plant Incinerator
B. Natural Gas Compressor Drivers:	
1)	HCC Compressor Drivers
2)	FCC Compressor Drivers
3)	Reformer Compressor Drivers
C. Catalytic Cracker Flue Gas:	
1)	HCC Plume Boiler
2)	HCC Catalyst Disengager
3)	FCC CO Boiler and Catalyst Regenerator
D. Flares:	
1)	Cracker Flare
2)	Alkylation Flare
3)	Coker Flare
E. Baghouse:	
1)	KOH Regenerator Lime Bin Baghouse

2. The following shall be the basis for SO_2 emissions limitations:

A. Emissions Limitation:

Chevron U.S.A., Inc., Salt Lake Refinery's maximum SO_2 emissions to the atmosphere shall not exceed 5.104 tons/day. Of this total, SO_2 emissions from all sources included under the emissions cap shall not exceed 0.254 tons/day. The annual emission limitation for SO_2 from all sources shall not exceed 1,731 tons. Of this total, the annual SO_2 emissions from all sources included under the emissions cap shall not exceed 83.0 tons.

B. The following sources shall be included in the SO_2 Emissions Cap:

Boilers and Furnaces:

1) Boilers #1 and #2
2) Boilers #3 and #4
3) Crude Furnaces F-1 and F-2
4) Crude Furnace F-2a
5) Crude Furnace F-3
6) HCC Furnace F-1
7) FCC Furnace F-21
8) FCC Furnace F-23
9) HDN Furnaces F-7110 and F-7130
10) Reformer Furnace F-1
11) Reformer Furnace F-2
12) Reformer Furnace F-3
13) Alkylation Furnace F-3617
14) Coker Furnace F-7001
15) Low Sulfur Diesel Plant Furnaces

Natural Gas Compressor Drivers:

16) HCC Compressor Drivers
17) FCC Compressor Drivers
18) Reformer Compressor Drivers

C. SO_2 emissions for the Emissions Cap Sources shall be determined by applying various emission factors to the relevant quantities of fuel combusted. This shall be performed according to the following:

1) Emission Factors for the various fuels shall be as follows:

natural gas - 0.60 lb/mmscf

plant gas - the emission factor to be used in conjunction with plant gas combustion shall be determined through the use of a continuous emissions monitor which will measure the H_2S content of the fuel gas in parts per million by volume (ppmv). The CEM shall be installed downstream of V-113 Fuel Gas Mix Drum. Daily emission factors shall be calculated using average daily H_2S content data from the CEM. The emission factor shall be calculated as follows:

(lb SO_2 / mmscf gas) = (24 hr avg. ppmv H_2S)/10^6 * (64 lb SO_2 / lb mole) * (10^6 scf / mmscf) / (379 scf / lb mole)

fuel oil - the emission factor to be used in conjunction with fuel oil combustion (during natural gas curtailments) shall be calculated based on the weight percent of sulfur, as determined by ASTM Method D-4294-89 or approved equivalent, and the density of the fuel oil, as follows:

(lb SO_2 / kgal) = (density lb/gal) * (1000 gal/kgal) * (wt.% S)/100 * (64 g SO_2 / 32 g S)

The weight percent sulfur and the fuel oil density shall be recorded for each day any fuel oil is combusted. Fuel oil may only be combusted during periods of natural gas curtailment. The sulfur content of the fuel oil shall be tested if directed by the Executive Secretary.

2) Daily fuel gas consumption shall be quantified as:

meter number FR-409 (Furnaces and Boilers)

minus the readings from meters FRC-71 and FR-109B. These meters measure the gas feeds to the HCC Plume Boiler and to the FCC CO Boiler which are regulated as individual point sources (see IX.H.2.b.G.2.D, below).

Daily fuel oil consumption shall be quantified as the sum of the individual consumptions measured by meters FR-2001, FR-2003, FR-2005, and FR-2007. Fuel oil consumption shall be allowed only during periods of natural gas curtailment.

Daily natural gas consumption shall be measured by meters FR-412 (HCC), FR-424 (FCC), and FR-66 (Reformer).

3) The equations used to determine emissions for the boilers and furnaces shall be as follows:

Emission Factor (lb/mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/mmscf) * Fuel Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

4) Total 24-hour SO_2 emissions for the sources included in the emissions cap shall be calculated by adding the daily results of the above SO_2 emissions equations for fuel gas, fuel oil, and natural gas combustion. Results shall be tabulated every day, and records shall be kept which include the CEM readings for H_2S (averaged for each one-hour period), all meter readings (in the appropriate units), fuel oil parameters (density and wt.% S, recorded for each day any fuel oil is burned), and the calculated emissions. See Subsection IX.H.2.a.M for compliance demonstration details.

D. Individual Point Source Limitation:

SO_2 emissions limits shall be individually set for each point source not designated as being in the emissions cap. The following Non-Emissions Cap Sources shall be regulated individually for SO_2 at the following emission limits:

Point Source	lb/hr	tons/yr	ppmv
HCC Plume Boiler	66.33	290.4	316
HCC Catalyst Disengager	15.18	66.7	616
FCC CO Boiler and Catalyst Regenerator	145.3	636.5	850
Sulfur Plant Incinerator	*177.3	*654.0	*

*Actual emission limitations shall be established in accordance with UACR Subsection R307-1-3.1.

E. Stack testing to determine hourly, daily, and annual compliance for the non-capped sources described in IX.H.2.b.G.2.D, above, shall be performed as directed in condition IX.H.2.b.G.5 below, and in accordance with sections IX.H.2.a.A and IX.H.2.a.M.

F. The following sources shall not be regulated for SO_2 emissions, nor shall they be included in the emission limitation totals herein.

1) Cracker Flare
2) Alkylation Flare
3) Coker Flare
4) KOH Regenerator Lime Bin Baghouse

3. The following shall be the basis for NO_x emissions limitations:

A. Emissions Limitation:

Chevron U.S.A., Inc., Salt Lake Refinery's maximum NO_x emissions to the atmosphere shall not exceed 3.249 tons/day. Of this total, NO_x emissions from all sources included under the emissions cap shall not exceed 2.341 tons/day. The annual emission limitation for NO_x from all sources shall not exceed 1,022 tons. Of this total, the annual NO_x emissions from all sources included under the emissions cap shall not exceed 690.2 tons.

B. The following sources shall be included in the NO_x Emissions Cap:

Boilers and Furnaces:

1) Boilers #1 and #2
2) Boilers #3 and #4
3) Crude Furnaces F-1 and F-2
4) Crude Furnace F-2a
5) Crude Furnace F-3
6) HCC Furnace F-1
7) FCC Furnace F-21
8) FCC Furnace F-23
9) HDN Furnaces F-7110 and F-7130
10) Reformer Furnace F-1
11) Reformer Furnace F-2

12) Reformer Furnace F-3
13) Alkylation Furnace F-3617
14) Coker Furnace F-7001
15) Low Sulfur Diesel Plant Furnaces
16) Sulfur Plant Incinerator

Natural Gas Compressor Drivers:

17) HCC Compressor Drivers
18) FCC Compressor Drivers
19) Reformer Compressor Drivers

C. NO_x emissions for the Emissions Cap Sources shall be determined by applying various emission factors to the relevant quantities of fuel combusted. This shall be performed according to the following:

1) Boilers and Furnaces:

Emission Factors for the boilers and furnaces shall be as follows:

natural gas - 140 lb/mmscf
plant gas - 140 lb/mmscf
fuel oil - 120 lb/kgal

Daily fuel gas consumption by all boilers and furnaces shall be quantified as the sum of:

meter number FR-409 (Furnaces and Boilers) and meter number FR-479 (Sulfur Incinerator)(mscfh):

minus the readings from meters FRC-71 and FR-109B. These meters measure the gas feeds to the HCC Plume Boiler and to the FCC CO Boiler which are regulated as individual point sources (see IX.H.2.b.G.3. D, below).

Daily fuel oil consumption shall be monitored by FR-2001, FR-2003, FR-2005, and FR-2007. Fuel oil consumption shall be allowed only during periods of natural gas curtailment.

The equations used to determine emissions for the boilers and furnaces shall be as follows:

Emission Factor (lb/mmscf) * Fuel Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

2) Natural Gas Compressors:

Emission Factors for the natural gas compressor drivers shall be as follows:

natural gas - 3400 lb/mmscf

Daily natural gas consumption for the compressor drivers shall be measured as the sum of meters numbered FR-412 (HCC), FR-424 (FCC), and FR-66 (Reformer).

The equation used to determine emissions for the compressor drivers shall be as follows:

Emission Factor (lb/mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

3) Total 24-hour NO_x emissions for sources included in the emissions cap shall be calculated by adding the results of the above NO_x equations for fuel gas, fuel oil, and natural gas combustion. Results shall be tabulated every day, and records shall be kept which include the meter readings (in the appropriate units) and the calculated emissions. See section IX.H.2.a.M Petroleum Refineries for compliance demonstration details.

D. Individual Point Source Limitation:

NO_x emissions limits shall be individually set for each point source not designated as being in the emissions cap. The following Non-Emissions Cap Sources shall be regulated individually for NO_x at the following emission limits:

Point Source	lb/hr	tons/yr	ppmv
HCC Plume Boiler	13.06	57.2	86.7
HCC Catalyst Disengager	4.04	17.7	228
FCC CO Boiler and Catalyst Regenerator	58.56	256.5	477

E. Stack testing to determine hourly, daily, and annual

compliance for the non-capped sources described in IX.H.2.b.G.3.D, above, shall be performed as directed in condition IX.H.2.b.G.5 below, and in accordance with sections IX.H.2.a.A and IX.H.2.a.M.

F. The following sources shall not be regulated for NO_x emissions, nor shall they be included in the emission limitation totals herein.

1) Cracker Flare
2) Alkylation Flare
3) Coker Flare
4) KOH Regenerator Lime Bin Baghouse

4. The following shall be the basis for PM_{10} emissions limitations:

A. Emissions Limitation:

Chevron U.S.A., Inc., Salt Lake Refinery's maximum PM_{10} emissions to the atmosphere shall not exceed 0.479 tons/day. Of this total, PM_{10} emissions from all sources included under the emissions cap shall not exceed 0.044 tons/day. The annual emission limitation for PM_{10} from all sources shall not exceed 175 tons. Of this total, the annual PM_{10} emissions from all sources included under the emissions cap shall not exceed 16.3 tons.

B. The following sources shall be included in the PM_{10} emissions cap:

Boilers and Furnaces:

1) Boilers #1 and #2
2) Boilers #3 and #4
3) Crude Furnaces F-1 and F-2
4) Crude Furnace F-2a
5) Crude Furnace F-3
6) HCC Furnace F-1
7) FCC Furnace F-21
8) FCC Furnace F-23
9) HDN Furnaces F-7110 and F-7130
10) Reformer Furnace F-1
11) Reformer Furnace F-2
12) Reformer Furnace F-3
13) Alkylation Furnace F-3617
14) Coker Furnace F-7001
15) Low Sulfur Diesel Plant Furnaces

16) Sulfur Plant Incinerator

C. PM_{10} emissions for the Emissions Cap Sources shall be determined by applying various emission factors to the relevant quantities of fuel combusted. This shall be performed according to the following:

1) Emission Factors for the boilers and furnaces shall be as follows:

natural gas - 5 lb/mmscf

plant gas - 5 lb/mmscf

fuel oil - the PM_{10} emission factor for fuel oil combustion will be determined based on the H_2S content of the oil as follows:

PM_{10} (lb/kgal) = (10 * wt.% S) + 3

2) Daily fuel gas consumption by all boilers and furnaces shall be quantified as the sum of:

meter number FR-409 (Furnaces and Boilers) and meter number FR-479 (Sulfur Incinerator)(mscfh):

minus the readings from meters FRC-71 and FR-109B. These meters measure the gas feeds to the HCC Plume Boiler and to the FCC CO Boiler which are regulated as individual point sources (see IX.H.2.b.G.4.D, below).

Daily fuel oil consumption shall be monitored by FR-2001, FR-2003, FR-2005, and FR-2007. Fuel oil consumption shall be allowed only during periods of natural gas curtailment.

3) The equations used to determine emissions for the boilers and furnaces shall be as follows:

Emission Factor (lb/mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/mmscf) * Plant Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

4) Total 24-hour PM_{10} emissions for the sources included in the emissions cap shall be calculated by adding the daily results of the above PM_{10} emissions equations for fuel gas, fuel oil, and natural gas combustion. Results shall be tabulated every day, and records shall be kept which include all meter readings (in the appropriate units), fuel oil parameters (wt.% S), and the calculated emissions. See section IX.H.2.a.M Petroleum Refineries for compliance demonstration details.

D. Individual Point Source Limitation:

PM_{10} emissions limits shall be individually set for each point source not designated as being in the emissions cap. The following Non-Emissions Cap Sources shall be regulated individually for PM_{10} at the following emission limits:

Point Source	lb/hr	gr/dscf	tons/yr
HCC Plume Boiler	9.66	0.0520	42.3
HCC Catalyst Disengager	17.6	0.7455	77.1
FCC CO Boiler and Catalyst Regenerator	8.96	0.0662	39.2
Lime Bin Baghouse	0.11	0.020	0.48

E. Stack testing to determine hourly, daily, and annual compliance for the non-capped sources described in IX.H.2.b.G.4.D, above, shall be performed as directed in condition IX.H.2.b.G.5 below, and in accordance with Sections IX.H.2.a.A. and IX.H.2.a.M.

F. The following sources shall not be regulated for PM_{10} emissions, nor shall they be included in the emission limitation totals herein.

1) HCC Compressor Drivers
2) FCC Compressor Drivers
3) Reformer Compressor Drivers
4) Cracker Flare
5) Alkylation Flare
6) Coker Flare

5. Stack Testing Requirements:

The following point sources have been required to comply with various emission rates and concentrations in the paragraphs preceding. The following is summary of the testing methods and frequencies appropriate to each point source. The provisions set forth in IX.H.2.a.A apply to the testing of these sources.

A) HCC Plume Boiler

	Limitations	Test Method	Frequency
SO_2	66.33 lb/hr 316 ppmv	6	If Directed
NO_x	13.06 lb/hr 86.7 ppmv	7	If Directed
PM_{10}	9.66 lb/hr .0520 gr/dscf	201/201a	Every 3 yrs.

B) HCC Catalyst Disengager

	Limitations	Test Method	Frequency
SO_2	15.18 lb/hr 616 ppmv	6	If Directed
NO_x	4.04 lb/hr 228 ppmv	7	If Directed
PM_{10}	17.6 lb/hr .7455 gr/dscf	201/201a	Every 3 yrs.

C) FCC CO Boiler and Catalyst Regenerator

	Limitations	Test Method	Frequency
SO_2	145.3 lb/hr 850 ppmv	6	If Directed
NO_x	58.56 lb/hr 477 ppmv	7	If Directed
PM_{10}	8.96 lb/hr .0662 gr/dscf	201/201a	Every 3 yrs.

D) Sulfur Plant Incinerator

	Limitations	Test Method	Frequency

SO_2	*177.3 lb/hr * ppmv	CEM	Continuous

*Actual emission limitations shall be established in accordance with UACR Subsection R307-1-3.1.

E) Lime Bin Baghouse

	Limitations	Test Method	Frequency
PM_{10}	0.11 lb/hr	201/201a	If Directed

6. Annual emissions for this source (the entire refinery) are hereby established at 175 tons/yr for PM_{10}, 2,578 tons/yr for SO_2 (which includes an additional 597.5 tons for routine sulfur plant down time and an estimated 250 tons for flare emissions), and 1,022 tons/yr for NO_x.

2.b.H Concrete Products Corporation - Walker Pit

1. The installations shall consist of only the following equipment located at the site:

   A. Three front-end loaders
   B. One haul truck
   C. One Dozer
   D. 30" x 42" Pioneer jaw crusher serial #V8326
   E. 54" Eljay standard cone crusher serial #278
   F. 54" Eljay fine cone crusher serial #524
   G. 5' x 16' Eljay screen serial #3460980
   H. 5' x 16' Cedar Rapids screen serial #1558
   I. 30" x 100' Radial stacker belt #65-128
   J. D-348 Cat generator #21-05
   K. 6' x 20' Eljay wash screen serial #825
   L. 30' x 100' Radial stacker belt #65-100
   M. H & B Asphalt Production Plant (each plant equipped with a baghouse)

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. North Standard 8000 Asphalt Plant Baghouse (NAPBH)

      1. PM_{10} 2.36 lbs/hr 0.024 grains/dscf

   B. South Standard 8000 Asphalt Plant Baghouse (SAPBH)

      1. PM_{10} 2.22 lbs/hr 0.024 grains/dscf

3. Stack testing to show compliance with the above emission limitations shall be performed for the plant exhaust stack emission point and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

	Method	Retest Every
Asphalt Plant Exhaust Stack		
PM_{10}	201/201a	3 year

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

A. 340 tons/hr aggregate production
B. 200,000 tons/yr aggregate production
C. 300 tons/hr asphalt production per plant
D. 100,000 tons/yr asphalt production per plant
E. 8 hours/day plant and pit operation

F. 2080 hours/yr plant and pit operation

Aggregate production shall be determined by examination of sales receipts and hour of operation by an operations log.

5. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions to the indicated emissions limitations:

A. All crushers
B. All screens
C. All conveyor transfer points

The sprays shall operate to the extent necessary to keep the equipment operating within the opacity limitation.

6. The owner/operator shall use only natural gas as a fuel in the asphalt plant. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR.

7. Annual emissions for this source (the entire plant) are hereby established at 34.7 tons/yr for PM_{10}, 1.3 tons/yr for SO_2, 17.4 tons/yr for NO_x.

2.b.I Concrete Products Corporation - Hobusch Pit

1. The installations shall consist of only the following equipment located at the site:

   A. 1 - Haul truck
   B. 2 - Front End loaders
   C. 10" x 36" Cedar Rapids jaw serial #15194
   D. 48" Telsmith cone crusher serial #6973
   E. 5' x 14' Eljay screen serial #831
   F. 4' x 2' Cedar Rapids wash screen serial #25565A
   G. 30" x 100' Radial stacker belt #65-79
   H. Rex central mix concrete batch plant complete with baghouses on the silos

2. The following production limits shall not be exceeded without prior approval in accordance with Section R307-1-3.1, UACR:

   A. 250 tons/hr aggregate production
   B. 160,000 tons/yr aggregate production
   C. 200 cubic yards per hour concrete production
   D. 100,000 cubic yards per year concrete production
   E. 8 hours/day plant operation
   F. 2080 hours/year plant operation

3. The silos shall be pneumatically loaded with cement or flyash. The displaced air from the silos generated during filling shall be passed through a baghouse.

4. The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary. There shall be only 6 storage piles, and the total acreage of the 6 storage piles shall not exceed 15.0 acres.

5. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

   A. All crushers
   B. All screens
   C. All conveyor transfer points

   The sprays shall operate to the extent necessary to keep the equipment operating within the opacity limitation.

6. The moisture content of the aggregate shall be maintained at a value of no less than 4.0% by weight. The silt content of

the product shall not exceed 3.0% by weight on a daily average without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

7. Aggregate production shall be determined by examination of the records of weigh scale readings which shall be maintained at the plant. The records shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

8. Annual emissions for this source (the entire plant) are hereby established at 33.4 tons/yr for PM_{10}, 0.9 tons/yr for SO_2, 8.3 tons/yr for NO_x.

2.b.J Concrete Products Corporation - C.P.C. Plant 3

1. The installations shall consist of only the following equipment plus any equipment not capable of producing air contaminants:

   A. 6' x 20' Eljay wash screen serial #34H0179
   B. 24" x 129' Radial stacker belt #54-04
   C. Clark/front-end loader
   D. Rex central mix concrete batch plant complete with baghouses on the silos

2. The following production limits shall not be exceeded without prior approval in accordance with Section R307-1-3.1, UACR:

   A. 200 cubic yards of concrete per hour
   B. 85,000 cubic yards of concrete per year
   C. 8 hours/day of plant operation
   D. 2080 hours/yr of plant operation

3. The silos shall be pneumatically loaded with cement or flyash. The displaced air from the silos generated during filling shall be passed through a baghouse.

4. The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary. The total acreage of the 5 storage piles shall not exceed 5.0 acres.

5. The silt content of the product shall not exceed 3.0% by weight on a daily average without prior approval in accordance with Subsection R307-1-3.1, UACR. The silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

6. Aggregate production shall be determined by examination of the records of weigh scale readings which shall be maintained at the plant. The records shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

7. Annual emissions for this source (the entire plant) are hereby established at 15.5 tons/yr for PM_{10}, 0.2 tons/yr for SO_2, 2.0 tons/yr for NO_x.

2.b.K Concrete Products Corporation - Whitehill Pit on Orchard Drive

1. The installations shall consist of only the following equipment capable of producing air contaminants located at the site:

   A. Three front-end loaders
   B. One Dozer
   C. One haul truck
   D. 22" x 36" Cedar Rapids jaw crusher serial #36464
   E. 48" Sysmans cone crusher serial #40088
   F. 54" Eljay cone crusher serial #404
   G. 4' x 12' Pioneer screen serial #412-4B-885
   H. 5' x 16' Eljay screen serial #34D0285
   I. 5' x 16' Eljay screen serial #1558
   J. Associated conveyor belts

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 325 tons/hr of aggregate production
   B. 475,000 tons/yr of aggregate production
   C. 8 hours/day of plant operation
   D. 2080 hours/yr of plant operation

   Aggregate production shall be determined by examination of the records of weigh scale readings which shall be maintained at the plant. The records shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

3. The haul road length shall not exceed 0.75 miles and the loader operations road shall not exceed 250 feet without prior approval in accordance with Subsection R307-1-3.1, UACR. The speed of vehicles on both the haul road and the loader operations road shall not exceed 10.0 miles per hour without prior approval in accordance with Section R307-1-3.1, UACR.

4. The open disturbed area shall not exceed 135.0 acres without prior approval from the Executive Secretary.

5. The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary. There shall be only 5 storage piles, and the total acreage of the 5 storage piles shall not exceed 10.0 acres.

6. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

   A. All crushers
   B. All screens
   C. All conveyor transfer points

   The sprays shall operate to the extent necessary to keep the equipment operating within the opacity limitation.

7. The moisture content of the material shall be maintained at a value of no less than 4.0% by weight. The silt content for the following products shall not exceed the following values without prior approval in accordance with Subsection R307-1-3.1, UACR:

A.	Base	9% by weight
B.	Sand	5% by weight
C.	Concrete aggregate	7% by weight
D.	1½" rock	7% by weight
E.	Class A chips	12% by weight

   The silt content shall be determined on a daily average. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

8. Annual emissions for this source (the entire plant) are hereby established at 48.0 tons/yr for PM_{10}, 0.9 tons/yr for SO_2, 9.8 tons/yr for NO_x.

2.b.L Crysen Refining, Inc., 2355 South 1000 West, Woods Cross, Davis County

1. The installation shall consist of the following equipment:

A. Boilers and Furnaces

1) H.D.S. Furnace [H-102]
2) Reformer Furnace [H-101]
3) Asphalt Blowing Furnace [F-701]
4) Asphalt Furnace [F-601]
5) Vacuum Furnace [F-501]
6) No. 2 Crude Unit Furnace [-251]
7) Preflash Furnace [F-231]
8) Stabilizer Furnace [F-221]
9) No. 1 Crude Unit Furnace [F-201]
10) Steam Boiler No. 1 [B-1]
11) Steam Boiler No. 2 [B-2]
12) Steam Boiler No. 3 [B-3]

B. Natural Gas Compressor Drivers (Reformer)

13) 150 Hp Compressor [K-1]
14) 150 Hp Compressor [K-2]
15) 330 Hp Compressor [K-3]

C. 16) The Refinery Flare

D. 17) Sulfur Recovery Unit (SRU)

2. The following shall be the basis for SO_2 emissions limitations:

A. Emissions Limitation:

Crysen Refining, Inc., Salt Lake Refinery's maximum SO_2 emissions to the atmosphere shall not exceed 0.557 tons/day. Of this total, SO_2 emissions from all sources included under the emissions cap shall not exceed 0.502 tons/day. The annual emission limitation for SO_2 from all sources shall not exceed 183 tons. Of this total, the annual SO_2 emissions from all sources included under the emissions cap shall not exceed 165.5 tons.

B. The following sources shall be included in the SO_2 Emissions Cap.

Boilers and Furnaces:

1) H.D.S. Furnace [H-102]
2) Reformer Furnace [H-101]
3) Asphalt Furnace [F-601]
4) Vacuum Furnace [F-501]
5) No. 2 Crude Unit Furnace [-251]
6) Preflash Furnace [F-231]
7) Stabilizer Furnace [F-221]
8) No. 1 Crude Unit Furnace [F-201]
9) Steam Boiler No. 1 [B-1]
10) Steam Boiler No. 2 [B-2]
11) Steam Boiler No. 3 [B-3]

Compressors:

12) 150 Hp Compressor [K-1]
13) 150 Hp Compressor [K-2]
14) 330 Hp Compressor [K-3]

C. SO_2 emissions for the Emissions Cap Sources shall be determined by applying various emission factors to the relevant quantities of fuel combusted. This shall be performed according to the following:

The total natural gas consumption at the plant is measured by meter FR-901. The gas stream splits downstream of this meter. The slipstream that is routed to the natural gas compressors is measured by meter FR-902. An emission factor of 0.60 lb/mmscf shall be applied to the quantity of natural gas metered by FR-902 for the 24-hour period to determine the daily emissions as:

Emission Factor (0.60 lb SO_2 / mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

The remaining portion of natural gas is blended with plant gas in the refinery fuel gas drum. The mixed gas is distributed to the boilers and furnaces throughout the plant. The flowrate of this gas stream is measured by meter FR-903. The emission factor to be used in conjunction with this gas stream is dependant on the H_2S content of the blended gas. The H_2S content shall be measured, in parts per million by volume (ppmv), by a continuous emissions monitor located downstream of the refinery fuel gas drum. Daily emission factors shall be calculated using average daily H_2S content data from the CEM. The emission factor shall be calculated as follows:

(lb SO_2 / mmscf gas) = (24 hr avg. ppmv H_2S)/10^6 * (64 lb SO_2 / lb mole) * (10^6 scf / mmscf) / (379 scf / lb mole)

The emissions associated with the combustion of this gas shall then be calculated as:

Emission Factor (lb SO_2 / mmscf) * Blended Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Fuel oil consumption shall be monitored with tank gauges. An emissions factor shall be calculated based on the sulfur content of the fuel oil (in weight percent), as determined by ASTM Method D-4294-89 or approved equivalent, and on the density of the fuel oil, as follows:

(lb SO_2 / kgal) = (density lb/gal) * (1000 gal/kgal) * (wt.% S)/100 * (64 g SO_2 / 32 g S)

Daily emissions shall then be calculated by applying this emission factor the amount of fuel oil consumed for the 24-hour period (kgal/24 hrs) as:

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

Fuel oil may only be combusted during periods of natural gas curtailment.

Total 24-hour SO_2 emissions for the sources included in the emissions cap shall be calculated by adding the daily results of the above SO_2 emissions equations for fuel gas, fuel oil, and natural gas combustion. Results shall be tabulated every day, and records shall be kept which include the CEM readings for H_2S (averaged for each one-hour period), all meter readings (in the appropriate units), fuel oil parameters (density and wt.% S, recorded for each day any fuel oil is burned), and the calculated emissions. See section IX.H.2.a.M Petroleum Refineries of the General Requirements of this Appendix for compliance demonstration details.

D. Individual Point Source Limitation:

SO_2 emissions limits shall be individually set for each point source not designated as being in the emissions cap. The following Non-Emissions Cap Sources shall be

regulated individually for SO_2 at the following emission limits:

Point Source	lb/hr	tons/yr	gr/dscf
Asphalt Blowing Furnace (F-701)	4.60	17.5	0.10

SRU Tailgas Incinerator - limits shall be established in accordance with UACR 3.1

E. Stack testing to determine hourly, daily, and annual compliance for the non-capped sources described in IX.H.2.b.L.2.D, above, shall be performed as directed in condition IX.H.2.b.L.5 below, and in accordance with sections IX.H.2.a.A and IX.H.2.a.M.

F. The following sources shall not be regulated for SO_2 emissions, nor shall they be included in the emission limitation totals herein.

1) The Refinery Flare

3. The following shall be the basis for NO_x emissions limitations:

A. Emissions Limitation:

Crysen Refining, Inc., Salt Lake Refinery's maximum NO_x emissions to the atmosphere shall not exceed 0.556 tons/day. Of this total, NO_x emissions from all sources included under the emissions cap shall not exceed 0.556 tons/day. The annual emission limitation for NO_x from all sources shall not exceed 156 tons. Of this total, the annual NO_x emissions from all sources included under the emissions cap shall not exceed 156 tons.

B. The following sources shall be included in the NO_x Emissions Cap:

Boilers and Furnaces:

1) H.D.S. Furnace [H-102]
2) Reformer Furnace [H-101]
3) Asphalt Blowing Furnace [F-701]
4) Asphalt Furnace [F-601]
5) Vacuum Furnace [F-501]
6) No. 2 Crude Unit Furnace [-251]

7) Preflash Furnace [F-231]
8) Stabilizer Furnace [F-221]
9) No. 1 Crude Unit Furnace [F-201]
10) Steam Boiler No. 1 [B-1]
11) Steam Boiler No. 2 [B-2]
12) Steam Boiler No. 3 [B-3]
13) 150 Hp Compressor [K-1]
14) 150 Hp Compressor [K-2]
15) 330 Hp Compressor [K-3]
16) SRU Tailgas Incinerator

C. NO_x emissions for the Emissions Cap Sources shall be determined by applying various emission factors to the relevant quantities of fuel combusted.

1) Boilers and Furnaces:

Emission Factors for the boilers and furnaces shall be as follows:

natural gas - 140 lb/mmscf
plant gas - 140 lb/mmscf
fuel oil - 120 lb/kgal

Daily gas consumption by all boilers and furnaces shall be measured by meter FR-903 located downstream of the refinery fuel gas drum. The gas that flows through this meter is actually a blend of plant gas and natural gas. Since the emission factors are considered to be the same for either gas (140 lb/mmscf), this factor will be applied to the metered quantity of blended gas.

Should future information reveal that there is a difference in the emission factors for natural gas and plant gas, then the respective quantities will need to be delineated as:

Natural Gas = (meter FR-901) - (meter FR-902)

Plant Gas = (meter FR-902) + (meter FR-903) - (meter FR901)

Daily fuel oil consumption shall be monitored with tank gauges. Fuel oil consumption shall be allowed only during periods of natural gas curtailment.

The equations used to determine emissions for the

boilers and furnaces shall be as follows:

Emission Factor (lb/mmscf) * Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

2) Natural Gas Compressors:

Emission Factors for the natural gas compressor drivers shall be as follows:

natural gas - 3400 lb/mmscf

Daily natural gas consumption for the compressor drivers shall be measured by meter FR-902.

The equation used to determine emissions for the compressor drivers will be as follows:

Emission Factor (lb/mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

3) Total 24-hour NO_x emissions for sources included in the emissions cap shall be calculated by adding the results of the above NO_x equations for fuel oil, natural gas, and (if necessary) plant gas combustion. Results shall be tabulated every day, and records shall be kept which include the meter readings (in the appropriate units) and the calculated emissions. See section IX.H.2.a.M Petroleum Refineries for compliance demonstration details.

D. The following sources shall not be regulated for NO_x emissions, nor shall they be included in the emission limitation totals herein.

1) The Refinery Flare

4. The following shall be the basis for the PM_{10} emissions limitations:

A. Emissions Limitations:

Crysen Refining, Inc., Salt Lake Refinery's maximum PM_{10} emissions to the atmosphere shall not exceed 0.0074 tons per day. Of this total, PM_{10} emissions

from all sources included under the emissions cap shall not exceed 0.0074 tons per day. The annual emission limitation for PM_{10} from all sources shall not exceed 2.70 tons. Of this total, the annual PM_{10} emissions from all sources included under the emissions cap shall not exceed 2.70 tons.

B. The following sources shall be included in the PM_{10} emissions cap:

1) H.D.S. Furnace [H-102]
2) Reformer Furnace [H-101]
3) Asphalt Blowing Furnace [F-701]
4) Asphalt Furnace [F-601]
5) Vacuum Furnace [F-501]
6) No. 2 Crude Unit Furnace [-251]
7) Preflash Furnace [F-231]
8) Stabilizer Furnace [F-221]
9) No. 1 Crude Unit Furnace [F-201]
10) Steam Boiler No. 1 [B-1]
11) Steam Boiler No. 2 [B-2]
12) Steam Boiler No. 3 [B-3]
13) SRU Tailgas Incinerator

C. PM_{10} emissions for the Emissions Cap Sources shall be determined by applying the following emission factors to the relevant quantities of fuel combusted in each unit. This shall be performed according to the following:

1) Emission Factors for the combustion sources shall be as follows:

natural gas - 5 lb/mmscf

plant gas - 5 lb/mmscf

fuel oil - the PM_{10} emission factor for fuel oil combustion shall be determined based on the H_2S content of the fuel oil as:

PM_{10} (lb/kgal) = (10 * wt.% S) + 3

2) Daily plant gas consumption for the cap sources (all boilers and furnaces) shall be measured as follows:

Natural Gas = (meter FR-901) - (meter FR-902)

Plant Gas = (meter FR-902) + (meter FR-903) - (meter FR901)

Daily fuel oil consumption shall be monitored by means of leveling gages on all tanks which feed combustion sources. Fuel oil consumption shall be allowed only during periods of natural gas curtailment.

3) The equations used to determine emissions shall be as follows:

Emission Factor (lb/mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/mmscf) * Plant Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

4) Total 24-hour PM_{10} emissions for the sources included in the emissions cap shall be calculated by adding the daily results of the above PM_{10} emissions equations for plant gas, fuel oil, and natural gas combustion. Results shall be tabulated every day, and records shall be kept which include all meter readings (in the appropriate units), fuel oil parameters (wt.% S), and the calculated emissions. See Section IX.H.2.a.M Petroleum Refineries for compliance demonstration details.

D. The following sources shall not be regulated for PM_{10} emissions, nor shall they be included in the emission limitation totals herein.

1) 150 Hp Compressor [K-1]
2) 150 Hp Compressor [K-2]
3) 330 Hp Compressor [K-3]
4) The refinery flare

5. Stack Testing Requirements:

The following point sources have been required to comply with various emission rates and concentrations in the paragraphs preceding. The following is summary of the testing methods and frequencies appropriate to each point source. The provisions set forth in IX.H.2.a.A of this document apply to the testing of these listed sources.

A. Asphalt Blowing Furnace

Limitations	Test Method	Frequency

SO_2	4.60 lb/hr	6	If Directed

B. SRU Tailgas Incinerator

SO_2 shall be established in accordance with UACR 3.1		CEM	Continuous

6. Annual emissions for this facility are hereby established at 2.70 tons/yr for PM_{10}, 206 tons/yr for SO_2 (which includes an estimated 23 tons of emissions resulting from the sulfur plant being down for annual maintenance), and 156 tons/yr for NO_x.

2.b.M Engelhard - (Harshaw Filtrol)

1. The installations shall consist of the following equipment:

   A. Bulk alumina receiving, off-loading and storage facilities - vented to a New Micro-pulse air baghouse

   B. Two (2) Mixers - vented to Stack #2 through a cyclone and a Micro-pulse fabric filter

   C. Two (2) Extruders - not vented and not a source of air pollution

   D. Two (2) Slot Dryers - vented through Stack #3 with no emission controls

   E. One (1) Rotary Calciner - vented with no emission controls into the slot dryers for heat recovery, and/or through the slot calciner stack #7, and/or the wet scrubber (stack #6)

   F. Two (2) Impregnators - vented to Stack #2 through a cyclone and a Micro-pulse fabric filter

   G. One (1) Tray Dryer - vented through Stack #4 with no controls

   H. Screening & packaging operation - vented to Stack #5 through a Ducon Fabric Filter control device

   I. One (1) Cage Mill vented - vented to Stack #2 through a cyclone and a Micro-pulse fabric filter

   J. One (1) Slot Calciner - vented without control

   K. Catalyst Regeneration furnace and associated pollution control equipment (wet scrubber stack #6)

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Stack #2, Micro-pulse baghouse control:

      PM_{10} 0.390 lbs/hr 0.016 grains/dscf

   B. Stack #6, wet caustic scrubber control:

      1. PM_{10} 0.96 lb/hr 0.016 grains/dscf

2.	SO_2	51 lb/hr max (Averaged over 24 hr)	31.5 ton	12-months rolling average

Sulfur emissions and reduction shall be determined by a mass balance method which shall be submitted by Engelhard and approved by the Executive Secretary. The method shall use an analysis for sulfur content of the catalyst before and after regeneration in conjunction with a 90% minimum removal efficiency of the SO_2 scrubber.

3.	NO_x	113 lb/hr max (averaged over 24 hr)	94.54 ton	12-months rolling average

No_x emissions shall be determined by a mass balance method, process limitation or work practice methodology which shall be submitted by Engelhard prior to the promulgation of the SIP and approved by the Executive Secretary.

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

		Method	Retest every
A.	Stack #2, Micro-pulse baghouse control		
	PM_{10}	201/201a	Test if directed
B.	Stack #6, wet scrubber control		
1.	PM_{10}	201/201a	3 years
2.	SO_2	6	3 years

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

A. 2.6 ton/hr regenerated catalyst feed rate
B. 2,250 ton/yr regenerated catalyst
C. 1.5 ton/hr new catalyst materials feed rate
D. 3,500 tons/yr new catalyst
E. 7,884 hours per year

Production limitations shall be determined by examination of company production records which shall be maintained at the plant. The records shall be kept on a daily basis. Hours of operation and production rates shall be determined by supervisor monitoring and maintaining an operations log.

5. Annual emissions for this source (the entire plant) are hereby established at 34.9 tons/yr for PM_{10}, 31.5 tons/yr for SO_2, 94.5 tons/yr for NO_x.

2.b.N Flying J Inc., - North Salt Lake

1. The installation shall consist of the following equipment:

Source		Fuel Consumed
A. Boilers and Furnaces:		
1)	#1 Crude Heater	Gas **
2)	Crude Preflash Heater	Gas
3)	#2 Crude Heater	Gas
4)	Vacuum Heater	Gas
5)	Unifiner Startup Heater	Gas
6)	Unifiner Heater	Gas
7)	Reformer Heater	Gas
8)	#1 Boiler	Gas
9)	#2 Boiler	Gas
10)	TCC Heater	Gas or Fuel Oil
11)	Alky Heater	Gas or Fuel Oil
12)	#7 C.O. Boiler	Gas or Fuel Oil
13)	#6 Boiler	Gas or Fuel Oil
14)	HDS Heater (future)	Gas or Fuel Oil
B. Catalytic Cracker:		
1)	Plume Burner	Coke
2)	TCC Separator Surge Drum	None
C. Natural Gas Compressors:		
1)	Reformer Compressors	Gas
D. Flare:		
1)	Flare Stack *	Gas
E. Sulfur Recovery Unit		
1)	Tail Gas Incinerator	Gas

* Depending on the sulfur treatment technology selected, it is possible that a second small unit flare could be employed on the treatment plant.

** The designation "GAS" refers to either plant supplied fuel gas or utility supplied natural gas or a mixture of both.

2. The following shall be the basis for SO_2 emissions

limitations:

A. Emissions Limitations:

Flying J, North Salt Lake Refinery's maximum SO_2 emissions to the atmosphere shall not exceed the following:

1) 2.904 tons per day between October 1 and March 31. Of this total, SO_2 emissions from all sources included under the emissions cap shall not exceed (this amount less the contribution from the SRU tailgas incinerator) tons/day.

2) 3.779 tons per day between April 1 and September 30. Of this total, SO_2 emissions from all sources included under the emissions cap shall not exceed (this amount less the contribution from the SRU tailgas incinerator) tons/day.

The annual emission limitation for SO_2 from all sources shall not exceed 824.8 tons. Of this total, the annual SO_2 emissions from all sources included under the emissions cap shall not exceed (this amount less the contribution from the SRU tailgas incinerator) tons.

B. The following sources shall be included in the SO_2 emissions cap:

Source		Fuel
1)	#1 Crude Heater	Gas **
2)	Crude Preflash Heater	Gas
3)	#2 Crude Heater	Gas
4)	Vacuum Heater	Gas
5)	Unifiner Startup Heater	Gas
6)	Unifiner Heater	Gas
7)	Reformer Heater	Gas
8)	#1 Boiler	Gas
9)	#2 Boiler	Gas
10)	TCC Heater	Gas or Fuel Oil
11)	Alky Heater	Gas or Fuel Oil
12)	#7 C.O. Boiler	Gas or Fuel Oil
13)	#6 Boiler	Gas or Fuel Oil
14)	HDS Heater (future)	Gas or Fuel Oil
15)	Plume Burner	Coke
16)	Reformer Compressors	Gas

C. SO_2 emissions for the Emissions Cap Sources shall be

determined by applying various emission factors to the relevant quantities of fuel combusted. This shall be performed according to the following:

1) Emission Factors for the various fuels shall be as follows:

   natural gas - 0.60 lb/mmscf

   plant gas - the emission factor to be used in conjunction with plant gas combustion shall be determined through the use of a continuous emissions monitor which will measure the H_2S content of the fuel gas in parts per million by volume (ppmv). Daily emission factors shall be calculated using average daily H_2S content data from the CEM. The emission factor shall be calculated as follows:

   (lb SO_2 / mmscf gas) = (24 hr avg. ppmv H_2S)/10^6 * (64 lb SO_2 / lb mole) * (10^6 scf / mmscf) / (379 scf / lb mole)

   fuel oil - the emission factor to be used in conjunction with fuel oil combustion (during natural gas curtailments) shall be calculated based on the weight percent of sulfur, as determined by ASTM Method D-4294-89 or approved equivalent, and the density of the fuel oil, as follows:

   (lb SO_2 / kgal) = (density lb/gal) * (1000 gal/kgal) * (wt.% S)/100 * (64 g SO_2 / 32 g S)

   The weight percent sulfur and the fuel oil density shall be recorded for each day any fuel oil is combusted. Fuel oil may be combusted only during periods of natural gas curtailment. The sulfur content of the fuel oil shall be tested if directed by the Executive Secretary.

2) Daily natural gas consumption shall be measured by the two meters that supply the refinery.

   Daily plant gas consumption shall be measured by whatever meters are necessary to measure the flow of plant gas throughout the plant.

   Daily fuel oil consumption shall be measured from

the strapping conversion on the tank that feeds the combustion sources.

3) The equations used to determine emissions for the boilers and furnaces will be as follows:

Emission Factor (lb/mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/mmscf) * Plant Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

4) The daily SO_2 contribution from the Plume Burner shall be made by applying a scaling factor of known SO_2 emissions from past stack tests, to the charge rate of the TCC unit and the sulfur concentration of the feed. The TCC feed weight percent sulfur concentration shall be determined by the refinery lab monthly with one or more analyses. In addition, the gravity of the TCC feed shall be determined daily. When required by the Executive Secretary, a stack test for SO_2 shall be performed using appropriate EPA methods to verify or update the SO_2 scaling factor.

5) Total 24-hour SO_2 emissions for the sources included in the emissions cap shall be calculated by adding the daily results of the above SO_2 emissions equations for natural gas, plant gas, and fuel oil combustion to the estimate for the Plume Burner. Results shall be tabulated every day, and records shall be kept which include the CEM readings for H_2S (averaged for each one-hour period), all meter readings (in the appropriate units), fuel oil parameters (density and wt.% S, recorded for each day any fuel oil is burned), and the calculated emissions. See section 2.1.M Petroleum Refineries of the General Requirements of this Appendix for compliance demonstration details.

D. Individual Point Source Limitation:

SO_2 emissions limits shall be individually set for each point source not designated as being in the emissions cap. The following Non-Emissions Cap Sources shall be

regulated individually for SO_2 at the following emission limits:

Point Source	lb/hr	tons/yr	ppmv
Sulfur Recovery Unit	???	???	???

Actual limitations are to be established in accordance with UACR Subsection R307-1-3.1.

E. Stack testing to determine hourly, daily, and annual compliance for the non-capped sources described in IX.H.2.b.N.2.D, above, shall be performed as directed in IX.H.2.b.N.5 below, and in accordance with sections IX.H.2.a.A and IX.H.2.a.M.

F. The following sources shall not be regulated for SO_2 emissions, nor shall they be included in the emission limitation totals herein.

1) The TCC Seperator Surge Drum
2) The Plant Flare

3. The following shall be the basis for NO_x emissions limitations:

A. Emissions Limitations:

Flying J, North Salt Lake Refinery's maximum NO_x emissions to the atmosphere shall not exceed the following:

1) 0.923 tons per day between October 1 and March 31. Of this total, NO_x emissions from all sources included under the emissions cap shall not exceed 0.923 tons/day.

2) 1.041 tons per day between April 1 and September 30. Of this total, NO_x emissions from all sources included under the emissions cap shall not exceed 1.041 tons/day.

The annual emission limitation for NO_x from all sources shall not exceed 278.7 tons. Of this total, the annual NO_x emissions from all sources included under the emissions cap shall not exceed 278.7 tons.

B. The following sources shall be included in the NO_x emissions cap:

Source		Fuel
1)	#1 Crude Heater	Gas **
2)	Crude Preflash Heater	Gas
3)	#2 Crude Heater	Gas
4)	Vacuum Heater	Gas
5)	Unifiner Startup Heater	Gas
6)	Unifiner Heater	Gas
7)	Reformer Heater	Gas
8)	#1 Boiler	Gas
9)	#2 Boiler	Gas
10)	TCC Heater	Gas or Fuel Oil
11)	Alky Heater	Gas or Fuel Oil
12)	#7 C.O. Boiler	Gas or Fuel Oil
13)	#6 Boiler	Gas or Fuel Oil
14)	HDS Heater (future)	Gas or Fuel Oil
15)	Plume Burner	Coke
16)	Reformer Compressors	Gas
17)	SRU Tailgas Incinerator	Gas

C. NO_x emissions for the Emissions Cap Sources shall be determined by applying various emission factors to the relevant quantities of fuel combusted.

1) Boilers and Furnaces:

Emission Factors for the boilers and furnaces shall be as follows:

natural gas - 140 lb/mmscf
plant gas - 140 lb/mmscf
fuel oil - 120 lb/kgal

Daily gas consumption by all boilers and furnaces shall be measured by whatever meters are necessary to delineate the flow of gas to the indicated sources.

Since the emission factors are considered to be the same for either gas (140 lb/mmscf), this factor will be applied to the metered quantity of blended gas. Should future information reveal that there is a difference in the emission factors for natural gas and plant gas, then the respective quantities will need to be delineated.

Daily fuel oil consumption shall be monitored with tank gages. Fuel oil consumption shall be allowed only during periods of natural gas curtailment.

The equations used to determine emissions for the boilers and furnaces shall be as follows:

Emission Factor (lb/mmscf) * Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

2) Reformer Compressors:

The Emission Factors for the compressor drivers shall be as follows:

natural gas - 3400 lb/mmscf
plant gas - 3400 lb/mmscf

Daily gas consumption for the compressor drivers shall be measured by whatever meters are necessary to delineate the flow of gas to the compressors.

The equation used to determine emissions for the compressor drivers shall be as follows:

Emission Factor (lb/mmscf) * Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

3) The daily NO_x contribution from the Plume Burner shall be determined by applying a scaling factor of known NO_x emissions to the unit combustion air flow rate. The combustion air flow rate is the process control for regulating coke buildup on the catalyst. The volumetric measurement shall be based upon operator readings for combustion air fan flow. The NO_x emission factor shall be initially established in accordance with Subsection R307-1-3.2.5 UACR, and updated when required by the Executive Secretary using appropriate EPA methods.

4) Total 24-hour NO_x emissions for sources included in the emissions cap shall be calculated by adding the results of the above NO_x equations for fuel oil, natural gas, and (if necessary) plant gas combustion to the estimate for the Plume Burner. Results shall be tabulated every day, and records shall be kept which include the meter readings (in

the appropriate units) and the calculated emissions. See section IX.H.2.a.M Petroleum Refineries for compliance demonstration details.

D. The following sources shall not be regulated for NO_x emissions, nor shall they be included in the emission limitation totals herein.

1) The TCC Seperator Surge Drum
2) The Refinery Flare

4. The following shall be the basis for PM_{10} emissions limitations:

A. Emissions Limitations:

Flying J, North Salt Lake Refinery's maximum PM_{10} emissions to the atmosphere shall not exceed the following:

1) 0.122 tons per day between October 1 and March 31. Of this total, PM_{10} emissions from all sources included under the emissions cap shall not exceed .082 tons/day.

2) 0.112 tons per day between April 1 and September 30. Of this total, PM_{10} emissions from all sources included under the emissions cap shall not exceed .072 tons/day.

The annual emission limitation for PM_{10} from all sources shall not exceed 22.0 tons. Of this total, the annual PM_{10} emissions from all sources included under the emissions cap shall not exceed 7.30 tons.

B. The following sources shall be included in the PM_{10} emissions cap:

Source		Fuel
1)	#1 Crude Heater	Gas **
2)	Crude Preflash Heater	Gas
3)	#2 Crude Heater	Gas
4)	Vacuum Heater	Gas
5)	Unifiner Startup Heater	Gas
6)	Unifiner Heater	Gas
7)	Reformer Heater	Gas
8)	#1 Boiler	Gas
9)	#2 Boiler	Gas

10)	TCC Heater	Gas or Fuel Oil
11)	Alky Heater	Gas or Fuel Oil
12)	#7 C.O. Boiler	Gas or Fuel Oil
13)	#6 Boiler	Gas or Fuel Oil
14)	HDS Heater (future)	Gas or Fuel Oil
15)	Plume Burner	Coke
16)	SRU Tailgas Incinerator	Gas

C. PM_{10} emissions for the Emissions Cap Sources shall be determined by applying the following emission factors to the relevant quantities of fuel combusted in each unit. This shall be performed according to the following:

1) Emission Factors for the combustion sources shall be as follows:

natural gas - 5 lb/mmscf

plant gas - 5 lb/mmscf

fuel oil - the PM_{10} emission factor for fuel oil combustion shall be determined based on the H_2S content of the oil as follows:

PM_{10} (lb/kgal) = (10 * wt.% S) + 3

2) Daily natural gas consumption for the cap sources (all boilers and furnaces) shall be measured by whatever meters are necessary to delineate the flow of gas to the indicated sources.

Daily plant gas consumption for the cap sources (all boilers and furnaces) shall be measured by whatever meters are necessary to delineate the flow of plant gas to the indicated sources.

Daily fuel oil consumption shall be monitored by means of leveling gages on all tanks. Fuel oil consumption shall be allowed only during periods of natural gas curtailment.

3) The equations used to determine emissions shall be as follows:

Emission Factor (lb/mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/mmscf) * Plant Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

4) The daily primary PM_{10} contribution from the Plume Burner shall be determined by applying an emission factor based upon the unit combustion air flow rate. The combustion air flow rate is the process control for regulating coke buildup on the catalyst. The volumetric measurement shall be based upon operator readings for combustion air fan flow. The emission factor shall initially be established in accordance with Subsection R307-1-3.2.5 UACR, and updated when required by the Executive Secretary using appropriate EPA methods.

5) Total 24-hour PM_{10} emissions for the sources included in the emissions cap shall be calculated by adding the daily results of the above PM_{10} emissions equations for plant gas, fuel oil, and natural gas combustion to the estimate for the Plume Burner. Results shall be tabulated every day, and records shall be kept which include all meter readings (in the appropriate units), fuel oil parameters (wt.% S), and the calculated emissions. See section IX.H.2.a.M Petroleum Refineries for compliance demonstration details.

D. Individual Point Source Limitation:

PM_{10} emissions limits shall be individually set for each point source not designated as being in the emissions cap. The following Non-Emissions Cap Sources shall be regulated individually for PM_{10} at the following emission limits:

Point Source	lb/hr	tons/yr	gr/dscf
1) TCC Separator Surge Drum	4.18	14.7	0.12

E. The following sources shall not be regulated for PM_{10} emissions, nor shall they be included in the emission limitation totals herein.

1) The Reformer Compressors
2) The Plant Flare

5. Stack Testing Requirements:

The following point sources have been required to comply with various emission rates and concentrations in the paragraphs preceding. The following is summary of the testing methods and frequencies appropriate to each point source. The provisions set forth in IX.H.2.a.A of this document apply to the testing of these listed sources.

A. The Plume Burner

	Limitations	Test Method	Frequency
SO_2	*NA	6	2 yrs.

*Although there is no specified limitation, the test results are to be used in conjunction with a scaling factor to be applied to this source on a daily basis.

B. The TCC Seperator Surge Drum

	Limitations	Test Method	Frequency
PM_{10}	4.18 lb/hr 0.12 gr/dscf	201/201a	If Directed

C. Sulfur Removal Unit (Tail Gas):

	Limitations	Test Method	Frequency
SO_2	???? lb/hr ??? ppmv	CEM	Continuous

Actual limitations are to be established in accordance with UACR Subsection R307-1-3.1.

6. Annual emissions for this source (the entire plant) are hereby established at 22.0 tons per year for PM_{10}, 864.6 tons per year (which includes 39.8 tons of emissions resulting from the sulfur plant being down for annual maintenance) for SO_2, and 278.7 tons per year for NO_x. Note that these totals include 0.06, 4.0, and 6.7 tons per year of PM_{10}, SO_2, and NO_x respectively as preliminary estimates for emissions resulting from a De-Waxing Unit, the plans for which are being reviewed at the time of this writing.

2.b.O Geneva Rock Products, Inc - (350 West 3900 South, Salt Lake City)

1. The installations shall consist of only the following equipment:

   A. Two Concrete Batch Plants
   B. Cement/Flyash Silos
   C. Diesel Loaders and Truck

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

A.	400	Cubic Yards/hr
B.	167,500	Cubic Yards/yr
C.	14	hours/day
D.	3,120	hours/yr

   Concrete production be determined by plant sales records.

3. The silos shall be pneumatically loaded with cement or flyash. The displaced air from the silos generated during filling shall be passed through a baghouse.

4. The mix truck haul road shall be paved and shall be cleaned by a street vacuum equipped with a baghouse or by water flooding as necessary to minimize fugitive dust.

5. The disturbed area shall not exceed 10 acres without prior approval from the Executive Secretary.

6. Annual emissions for this source (the entire plant) are hereby established at 4.53 tons/yr for PM_{10}, 0.45 tons/yr for SO_2, 5.28 tons/yr for NO_x.

2.b.P Geneva Rock Products, Inc - (Point of the Mountain Pit)

1. The approved installations shall consist of only the following equipment:

A. In the Hansen Pit

1. The L-4 Crushing Plant:

Triple Deck Eljay Screen (#34L1079)
45 inch Eljay Cone Crusher (#22G0690)
Eljay 6' X 16' Wash Screen (#34J0385)
Associated Conveyors
Two (2) Front End Loaders

2. The G-4 Cement Batch Plant:

Ross model 135 Batch Plant (#135-32)
Ross model V200 600 CFM Bin Vent (cement silo)
Todd model 36-SK 600 CFM Bin Vent (flyash silo)
One Front End Loader

B. In the North Hansen Pit

1. The L-3 Portable Crushing Plant:

Cedarapids Jaw Crusher/Screen Deck (#21447)
Eljay Cone Crusher/Screen Deck (#42A0278)
Associated Conveyors

One bulldozer
Two front End Loaders
One generator

2. The L-5 Portable Crushing Plant:

Cedarapids Screen/Jaw/Rolls unit (#13385)
Eljay 4' X 12' Wet Screen Deck
Associated Conveyors
Two Front End Loaders
Two Generators

3. Additional Equipment:

45 inch Eljay Cone Crusher (41J0581)
Eljay 5' X 16' Screen Deck (#34D1481)
Universal Rolls (#207X46)
One Generator
Cedarapids Jaw Crusher (#21480)

One Bulldozer
One Loader

4. The F-1 Hot Plant:

Todd Model 36-DK 600 CFM Bin Vent (Lime Silo)
CMI Oil Fired Drum Mix Asphalt Plant with Venturi Scrubber (#UVM-1700)
One Front End Loader

C. In the Mount Jordan Pit

1. The L-1 Crushing Plant:

Eljay 5' X 16' Screen Deck (#34L0277)
Eljay 45" Cone Crusher (#533)
Eljay 5' X 16' Wet Screen Deck (#34J0783)
Eljay 5' X 16' Wet Screen Deck (#34E0984)
Associated Conveyors
Two Front End Loader

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

A. The CMI Asphalt Plant

1.	PM_{10}	3.34 lbs/hr	0.024 grains/dscf (Virgin)
2.	PM_{10}	3.90 lbs/hr	0.028 grains/dscf (Recycle)
3.	SO_2	18.72 lbs/hr	118 ppmdv

Stack testing to show compliance with the above emissions limits shall be performed in accordance with IX.H.2.a.A and every three years thereafter.

3. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

A. All crushers
B. All screens
C. All conveyor transfer points

The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitation of 10%.

4. Water shall be added to the mined material (to be bulldozed)

such that before the material is moved, its moisture content, as determined by ASTM Method D-2216 on the -40 mesh portion of the sample, is greater than 4.0% by weight. This moisture content shall be maintained throughout subsequent crushing, screening and conveying circuits. The silt content of the product shall not exceed 15% by weight on a daily average without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

5. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. For the Asphalt Plant:

      1. 285 tons/hr
      2. 250,000 tons/yr

   B. For the Concrete Batch Plant:

      1. 100 cubic yards/hr
      2. 200,000 cubic yards/yr

   C. For the Aggregate Pits:

      1. 900 tons/hr of crushing/screening production
      2. 1,000,000 tons of mined material per year
      3. 2,000 hours of operation per unit per year

   Asphalt, concrete and pit production shall be determined through the use of weigh scales and recording of the weights. The records shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

6. The batcher unit on the Ross Plant shall be enclosed in a building as proposed in the notice of intent dated September 4, 1984, and the loading process from the discharge hopper into the mixer trucks shall be controlled by an adjustable boot.

7. The cement and flyash silos shall be pneumatically loaded. The displaced air from the silos generated during filling shall be passed through a baghouse. The flow rate through the baghouse shall not exceed 600 ACFM. The baghouse flow rate shall be measured at the request of the Executive Secretary. The method shall be 40 CFR 60, Appendix A, Method 2.

8. For the asphalt plant, the following operating parameters shall be maintained within the indicated ranges:

   A. Pressure drop across the venturi scrubber - 15" nominal, 13" w.g. minimum

   B. Scrubber liquid flow rate - 300 gallons per minute nominal, 275 gpm minimum 225 gpm

   They shall be monitored with equipment located such that an inspector can at any time safely read the output. The readings shall be accurate to within the following ranges:

   A. Plus or minus 1.0 inch w.c.
   B. Plus or minus 15 gpm

   All instruments shall be calibrated against a primary standard at least once every 90 days. The primary standard shall be specified by the Executive Secretary.

9. Under no circumstances shall the percent by weight of recycle asphalt exceed 50%.

10. The owner/operator shall use only Number 2 fuel oil or better as fuel or other fuel that can demonstrate sulfur content of less than 0.45% (less then 0.05% after December 1993) by weight. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR. The sulfur content of any fuel oil burned shall not exceed 0.45% by weight as determined by ASTM Method D-4294-89 or, as appropriate, the sulfur content of any fuel oil burned shall not exceed 0.25 pounds of sulfur per million BTU heat input as determined by ASTM Method D-4294-89. The sulfur content shall be tested if directed by the Executive Secretary. Fuel consumption shall be determined by examination of vendor sales receipts which shall be maintained for two years. These records shall be made available to the Executive Secretary upon request.

11. The open disturbed area shall not exceed 150 acres without prior approval from the Executive Secretary.

12. The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary. The total acreage of the storage piles shall not exceed 75 acres.

13. All installations and facilities authorized by this subsection shall be adequately and properly maintained.

14. Annual emissions for this source (the entire plant) are hereby established at 81.0 tons/yr for PM_{10}, 9.64 tons/yr for SO_2, 21.4 tons/yr for NO_x.

2.b.Q Harper Sand & Gravel Inc., - (Pit #1)

1. The installations shall consist of only the following equipment capable of producing air contaminants located at the site:

   A. El Jay cone crusher 45" SN 22J 0878
   B. 5' x 16' triple deck screen (wet) SN 34J 0978
   C. One 30" x 26' conveyor belt
   D. One 30" x 45' conveyor belt
   E. One 42" x 27' conveyor belt
   F. Eagle sand screw 30" x 26'
   G. Three front end loaders
   H. One haul truck

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 280 tons/hr of aggregate
   B. 400,000 tons/yr of aggregate
   C. 12 hours/day
   D. 3744 hours/yr

3. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

   A. All crushers
   B. All screens

   The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitation.

4. The moisture content of the aggregate shall be maintained at a value of no less than 4.0% by weight. The silt content of the product shall not exceed 7.0% by weight on a daily average without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

5. Annual emissions for this source (the entire plant) are hereby established at 7.8 tons/yr for PM_{10}, 1.9 tons/yr for SO_2, 18.4 tons/yr for NO_x.

2.b.R Harper Sand and Gravel, Inc - Pit #10

1. The installations shall consist of only the following equipment capable of producing air contaminants located at the site:

   A. Telesmith cone crusher SN 8909 485
   B. D 343 Cat Generator SN 62B 16385
   C. One 30" x 35" belt feeder
   D. One Coleman 40" x 22' conveyor belt SN 22-40-24-59
   E. One 30" x 100' radial stacker belt
   F. Three front end loaders
   G. One bulldozer

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 280 tons/hr of aggregate
   B. 400,000 tons/yr of aggregate
   C. 12 hours/day
   D. 3744 hours/yr

   Aggregate production shall be determined by examination of the records of weigh scale readings which shall be maintained at the plant. The records shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

3. The open disturbed area shall not exceed 50.0 acres without prior approval from the Executive Secretary.

4. The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary. The total acreage of the storage piles shall not exceed 2.0 acres.

5. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

   A. All crushers
   B. All screens

   The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitation.

6. The moisture content of the aggregate shall be maintained at a value of no less than 4.0% by weight. The silt content of

the product shall not exceed 10.0% by weight on a daily average without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

7. Annual emissions for this source (the entire plant) are hereby established at 16.3 tons/yr for PM_{10}, 1.6 tons/yr for SO_2, 17.9 tons/yr for NO_x.

2.b.S Hercules Aerospace Company - Plant #1

1. The buildings listed below have been evaluated and determined that they have sufficient potential emissions to be emitted from the buildings, building vents or stacks to require regulation:

Building - 18	NIROP natural gas fired boilers
Burning Grounds - 32A	Open burning of waste propellant and contaminated waste.
Building - 2334	Paint booth in finish area
Building - 8501	Powerhouse for plant steam production
Building - CD2A/2C	HMX Grinder Building
Bacchus West	Special Conditions

2. Hercules shall use natural gas as primary fuel in all fuel burning furnaces, ovens and boilers. Number 2 fuel oil or better shall be used only as a backup fuel to be used during natural gas curtailments and for maintenance firing. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR. Fuel consumption shall be determined by gas meter readings and oil receiving and inventory records.

   The #2 fuel oil may be used only during periods of natural gas curtailment, and for maintenance firings. Maintenance firings shall not exceed 1% of the annual plant BTU requirement. Records of fuel oil use shall be kept which shows the date the oil was fired, the duration in hours the oil was fired, the amount of fuel oil consumed and the reason for each firing.

3. The total natural gas consumption limit for all facilities shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   1080 Million cubic feet per year

   Natural gas consumption shall be determined by Mountain Fuel Company's gas meter readings. The records shall be kept on a monthly basis.

4. The owner/operator shall use only Number 2 fuel oil or better as fuel or other fuel that can demonstrate sulfur

content of less than 0.45% by weight. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR. The sulfur content of any fuel oil burned shall not exceed 0.45% by weight as determined by ASTM Method D-4294-89 or, as appropriate, the sulfur content of any fuel oil burned shall not exceed 0.25 pounds of sulfur per million BTU heat input as determined by ASTM Method D-4294-89. The sulfur content shall be tested if directed by the Executive Secretary. Fuel consumption shall be determined by examination of vendor sales receipts which shall be maintained for two years. These records shall be made available to the Executive Secretary upon request.

5. All paint booths shall be equipped with particulate filters to control emissions.

6. All plant roads and parking lots shall be paved, with the exception of some power line maintenance roads, and shall be cleaned by a street vacuum equipped with a baghouse or by water flooding as necessary to minimize fugitive dust.

7. Annual emissions for this source Plant #1 (plant #1, NIROP and Bacchus West) are hereby established at 241.3 tons/yr for PM_{10}, 1.4 tons/yr for SO_2, and 142.0 tons/yr for NO_x.

Building - CD2A/2C - HMX Grinder Building

1. Each building/installation shall consist of the following equipment capable of PM_{10} emissions:

   A. HMX air jet collision grinders
   B. Jetomizer baghouse (2)
   C. 1st secondary disposable filter rated at 99.5%
   D. 2nd secondary disposable filter rated at 99.7%

2. Visible emissions from any point or fugitive emission source associated with these installations/buildings or control facilities shall not exceed 0% opacity.

3. The following production and operating limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 50,000 lb HMX ground/month
   B. 500,000 lb HMX ground/year

   Production shall be determined by examination of company operations records. Records shall be kept on a monthly

basis.

Building - 18 - NIROP Natural Gas Boiler Stacks 1, 2 & 3

1. The installations shall consist of the following equipment capable of PM_{10} emissions:

   A. Bld 18-Stack 1, - 29.1 MMBTUH natural gas fired boiler
   B. Bld 18-Stack 2, - 29.1 MMBTUH natural gas fired boiler
   C. Bld 18-Stack 3, - 29.1 MMBTUH natural gas fired boiler

Building - 32A - Burning Grounds

1. The installations shall consist of the following equipment capable of PM_{10} emissions:

   A. Three burning cages
   B. 16 open burn pans

2. The following quantities of waste to be incinerated shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 4500 lb/day waste propellant
   B. 822 tons/yr total waste propellant
   C. 1,114 tons/yr total waste burned

   The records shall be kept on a daily basis.

3. Open burning of waste propellant and contaminated wastes shall not be done during days when a Salt Lake County "No Burn" order is in effect for wood stoves, except that the most unstable (i.e. nitroglycerin) wastes shall be allowed to be burned. These special burns of unstable wastes shall not exceed 400 lb/day.

   The backlog of wastes not burned during the "No Burn" days for wood stoves shall be destroyed at up to a total of 6,000 lb/day on the days following the burning restrictions.

4. Hercules shall submit a notice of intent to construct a waste propellant incinerator by December 31, 1992. The tentative date for completion of the installation of the incinerator shall be 24 months after approval by both the Bureau of Air Quality and the Bureau of Solid and Hazardous Waste.

5. Hercules shall submit an annual progress report on the development of a waste propellant incinerator to be

submitted within 30 days of the end of each calendar year.

Building 2334 - Finishing Building 2

1. The installations shall consist of only a paint booth with dry type disposable paint particulate filters.

Building - 8501 - Plant #1 Boilers

1. The installations shall consist of the following equipment capable of PM_{10} emissions:

   A. Nebraska natural gas fired boiler - rated @ 25 MMBTUH
   B. Murray natural gas fired boiler - rated at 25 MMBTUH
   C. Keeler replacement natural gas fired boiler - rated at < 50 MMBTW - Notice of intent, with details, shall be submitted and processed prior to construction in accordance with Subsection R307-1-3.1, UACR.

      A schedule for installation of the replacement natural gas fired boiler shall be submitted by April 1, 1991. The amount of natural gas anticipated to be used in the replacement boiler has been included in this approval order as well as the potential emissions based on AP 42 1.4 emissions factors.

   D. Keeler coal-fired boiler - The boiler shall be operated until December 31, 1992 by which time the boiler shall be disabled or removed. Visible emissions from the exhaust stack shall not exceed 20% opacity.

Bacchus West Buildings

1. The aluminum premix systems shall be designed to properly seal as proposed to prevent escape of fugitive particulate emissions. The operation shall be inclosed in building 2429

2. The weigh hoppers and transport bins in the 1800 gallon mix building shall be properly sealed as proposed to prevent escape of fugitive particulate emissions.

3. Paint booths with dry type paint arrestor particulate filters.

2.b.T Hercules Aerospace Company - Plant #3 - Graphite Fiber Production

The buildings listed below have been evaluated and determined to have sufficient potential PM_{10} emissions emitted from the buildings, building vents or stacks to require regulation.

Building - 2344 - Graphite fiber production, Lines #1, #2, & #3

Building - 2436 - Graphite fiber production, Lines #4 & #5

Building - 2440 - 3D Carbon-carbon structures

Building - 2478 - Solvent coating and resin prep and handling

Building - 2479 - Graphite fiber production, Lines #6 & #7

Building - 8162 - R & D facility with an incinerator

General Conditions for Plant #3,

The following regulations shall apply to any point or fugitive source at Plant #3:

1. Visible emissions from any point or fugitive emission source associated with the installation or control facilities shall not exceed 10% opacity. Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9.

2. All plant roads and parking lots shall be paved, with the exception of some power line maintenance roads, and shall be cleaned by a street vacuum equipped with a baghouse or by water flooding as necessary to minimize fugitive dust.

3. The following consumption/production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 175 million scf of natural gas per year
   B. 10.8 million lb of carbon fibers from the fiberlines per year

   Natural gas consumption shall be determined by gas billing records for the plant and graphite products production shall be determined by plant production records.

4. Hercules Plant #3 shall use natural gas as primary fuel in all fuel burning furnaces, ovens, incinerators, and boilers. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR.

5. The incinerator exhaust stacks need not be constructed to accommodate testing. However, if the Executive Secretary determines a stack test is necessary, whatever modifications needed to meet 40 CFR 60, Appendix A, Method 1 and to provide OSHA approvable access to the test location shall be retrofitted to the emission point.

6. All emergency generators shall be used only when the normal power sources have failed and created emergency conditions, except for normal maintenance start-up procedures. The total use rate per generator set shall not exceed 65 hours per year unless it is reported under Subsection R307-1-4.7, UACR (unavoidable breakdown).

7. Annual emissions for this source (the entire plant #3) are hereby established at 76.8 tons/yr for PM_{10}, 0.1 ton/yr for SO_2 and 98.9 tons/yr for NO_x

Building - 2344 - Graphite Fiber Production, Lines #1, #2, & #3

1. The installations shall consist of only the following equipment:

   A. Graphite Fiber Lines #1, #2, and #3 with electrically heated oxidation ovens, low temperature carbonization furnaces, high temperature carbonization furnaces, fiber sizing operations, and spooling operations

   B. Three (3) John Zink or equivalent system, natural gas fired fume incinerators as described in the Material List submitted June 8, 1979, to control emissions from the low temperature carbonization furnaces

   C. Three (3) standby emergency generators:

      1 @ 250 kw, diesel fueled
      1 @ 125 kw, diesel fueled
      1 @ 45 kw, natural gas fueled

2. The fume incinerators shall be operated and maintained with a minimum temperature of 1400°F. The incinerator temperature shall be monitored with temperature sensing equipment which shall be capable of continuous measurement and readout of the combustion temperature with the readout

located such that an inspector/operator can at any time safely read the output. The measurement shall be accurate as specified below. The measurement need not be continuously recorded.

All instruments shall be calibrated against a primary standard at least once every 180 days. The calibration procedure shall be in accordance with 40 CFR 60, Appendix A, Method 2, paragraph 4.3.

3. The incinerator shall be designed with a minimum residence time of 0.5 sec at maximum flow rate.

4. All effluent stack/vents shall have wire mesh filters to control broken carbon filaments, except those stacks vented to the fume incinerators, high temperature furnace outlet stacks on Fiberlines #2 & #3, end chamber fans on the oxidation ovens and surface treatment stacks.

Building - 2436 - Graphite Fiber Production, Lines #4 & #5

1. The installations shall consist of the following equipment capable of PM_{10} emissions:

   A. Graphite fiber line #4 with electrically heated oxidation ovens, low temperature carbonization furnace, and high temperature carbonization furnace. The low temperature carbonization furnace emissions shall be controlled by a fume incinerator. The high temperature carbonization furnace shall be retrofitted with a burner box at the furnace entrance equipped with pilot lights to insure that combustion takes place.

   B. Graphite fiber line #5 with natural gas fired oxidation ovens, electrically heated-low temperature carbonization furnace, and high temperature carbonization furnace. The low temperature carbonization furnace emissions shall be controlled by a fume incinerator. The high temperature carbonization furnace shall be retrofitted with a burner box at the furnace entrance equipped with pilot lights to insure that combustion takes place.

   C. Two (2) John Zink, natural gas fired fume incinerators as described in the notice of intent dated November 19, 1980.

   D. One 6.3 MMBTU/Hr natural gas fired standby boiler.

E. Two Diesel fired emergency generators as follows:

1. l - rated at 180 kw
2. 1 - rated at 200 kw

2. The fume incinerators shall be operated and maintained with a minimum temperature of 1400°F. The incinerator temperature shall be monitored with temperature sensing equipment which shall be capable of continuous measurement and readout of the combustion temperature with the readout located such that an inspector/operator can at any time safely read the output. The measurement shall be accurate as specified below. The measurement need not be continuously recorded.

   All instruments shall be calibrated against a primary standard at least once every 180 days. The calibration procedure shall be in accordance with 40 CFR 60, Appendix A, Method 2, paragraph 4.3.

3. The incinerator shall be designed with a minimum residence time of 0.5 seconds at maximum flow rate.

4. All effluent stack/vents for process emissions shall have wire mesh filters to control broken carbon filaments, except those stacks vented to the fume incinerators.

Building - 2440 - 3D Carbon-Carbon Structures

1. The approved installations shall consist of the following equipment capable of PM_{10} emissions:

   A. Exhaust fan with fiber collection system
   B. Emergency generator, 100 kw - natural gas fired
   C. Incinerator, 1 MMBTU/Hr minimum rate
   D. Sanding area with fiber collection system

2. The incinerator (1.C) for the destruction of polynuclear aeromatics and other polynuclear aeromatics and hydrocarbon vapors exhausted from the facility shall be installed, maintained, and operated in accordance with the notice of intent dated November 17, 1988, and February 17, 1989. This incinerator shall receive the process effluent from the impregnation autoclave, the carbonization autoclave and the CVD/graphitization furnace. Completion of modifications to building 2440 shall be no later than April 30, 1991.

3. The weaving machines ventilation exhausts shall be equipped with particulate filters which have a capture efficiency of

95% for 5 μm particles.

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 70 pitch impregnation processes per year
   B. 50 carbonization processes per year
   C. 35 graphitization processes per year
   D. 18 CVD processes per year

   The operations log shall record the amounts of special resins, coal tar pitch, and furfural used in these different processes.

5. All incidents of "vessel rupture" during operations of the HiPIC autoclave shall be recorded in the operations log.

6. The fume incinerator shall be operated and maintained with a minimum temperature of 1500°F. The incinerator temperature shall be monitored with temperature sensing equipment which shall be capable of continuous measurement and readout of the combustion temperature with the readout located such that an inspector/operator can at any time safely read the output. The measurement shall be accurate as specified below. The measurement need not be continuously recorded.

   All instruments shall be calibrated against a primary standard at least once every 180 days. The calibration procedure shall be in accordance with 40 CFR 60, Appendix A, Method 2, paragraph 4.3.

7. The incinerator shall be designed with a minimum effective temperature residence time of 0.5 second at maximum flow rate.

8. All effluent stack/vents for process emissions shall have wire mesh filters to control broken carbon filaments, where applicable, except those stacks vented to the fume incinerators.

Building - 2478 - Solvent Coating And Resin Prep And Handling

1. The installations for the solvent coater shall consist of the following equipment capable of PM_{10} emissions:

   A. MEK fume incinerator
   B. 300 gallon mixer
   C. 1 - 300 kw diesel fueled generator set

2. The MEK fume incinerator shall be operated and maintained within a temperature range of 1450°F to 1800°F. The incinerator temperature shall be monitored with temperature sensing equipment which shall be capable of continuous measurement and readout of the combustion temperature with the readout located such that an inspector/operator can at any time safely read the output. The measurement shall be accurate as specified below. The measurement need not be continuously recorded.

   All instruments shall be calibrated against a primary standard at least once every 180 days. The calibration procedure shall be in accordance with 40 CFR 60, Appendix A, Method 2, paragraph 4.3.

   The incinerator shall be designed with a minimum effective temperature residence time of 0.5 second at maximum flow rate.

3. The approved installations/processes for the resin preparation and handling shall consist of the following in accordance with the information submitted in the notice of intent dated December 12, 1985, and the follow up correspondence dated March 21, 1986, and April 11, 1986:

   A. Transfer of powdered curing agents to the hopper shall be done using a Young Conveying System or equivalent system. Equivalency shall be determined by the Executive Secretary. The hopper shall discharge through a feeder into the continuous mixer as a closed system.

   B. Heat sources shall be electrically powered or steam powered from existing plant services. If any other power source is used, a notice of intent shall be filed with the Executive Secretary in accordance with Subsection R307-1-3.1, UACR.

4. All effluent stack/vents for process emissions shall have wire mesh filters to control broken carbon filaments, where applicable, except those stacks vented to the fume incinerators.

Building - 2479 - Graphite Fiber Production, Lines #6 & #7

1. The installations in building 2479 for graphite fiber lines #6 shall consist of only the following equipment:

   A. 4 - low temperature natural gas fired oxidation ovens

(270°C maximum) with 2 - 2.5 MMBTU/hr burners per oven

B. 1 - low temperature nitrogen purged carbonization furnace (700°C) with 2 natural gas fired exhaust ports (with pilot lights) that precombusts part of the volatiles prior to the fume incinerator

C. 1 - John Zink or equivalent fume incinerator that controls emissions from the low temperature carbonization furnaces

D. 1 - high temperature nitrogen purged carbonization furnace (1450°C) with 2 burner boxes at the furnace entrance equipped with pilot lights to insure that combustion takes place

E. Finishing area shall have water based wash baths:

1 - Ammonium-bicarbonate
2 - Water wash baths

F. Dry type wire mesh air filter devices shall be installed on all hoods and ventilation stacks to control broken carbon filaments except those vented to an incinerator.

G. The following emergency diesel fired electrical generator shall be installed:

One 250 kw Generating capacity

2. The installations in building 2479 for graphite fiber line #7 shall consist of the following equipment capable of PM_{10} emissions:

A. Four low temperature oxidation ovens (270°C maximum). The ovens shall be indirectly heated with 2 - 2.5 MMBTU/hr natural gas fired burners per oven

B. One electrically heated low temperature nitrogen purged tar removal carbonization furnace (750°C) with 1 natural gas fired port (with pilot light) that ensures partial precombustion of the volatiles prior to exhausting into a fume incinerator

C. One electrically heated low temperature nitrogen purged carbonization furnace (900°C) with 2 natural gas fired exhaust ports (with pilot light) that precombusts part of the volatiles prior to the fume incinerator

D. One McGill Inc, or equivalent fume incinerator that controls emissions from both the tar removal and low temperature carbonization furnaces

E. One electrically heated high temperature nitrogen purged carbonization furnace (1450°C) and a burner box (a pilot light shall be included in the burner box to insure that combustion takes place)

F. All effluent stack/vents for process emissions shall have wire mesh filters to control broken carbon filaments, where applicable, except those stacks vented to the fume incinerators.

G. The following emergency diesel fired electrical generators shall be installed:

1. 1 @ 100 kw generating capacity
2. 1 @ 400 kw generating capacity

The above Equipment shall be installed according to the information submitted to the Executive Secretary in the notice of intent dated May 16, 1989, and subsequent information submitted to the date of this SIP.

3. Emissions from line #6 and #7 low temperature carbonization furnaces shall be controlled by a John Zink, McGill, Inc. or equivalent fume incinerator. The following operating parameters for the incinerators shall be maintained within the indicated ranges:

A. Temperature - 1400°F minimum to 1700°F maximum for both incinerators

B. Percent excess O_2 - 6 minimum for line #7 incinerator

4. The incinerators required in conditions 1.C and 1.D above shall be monitored with equipment, where applicable, located such that an inspector/operator may at any time safely read the output. The measurements shall be accurate to within the following ranges:

A. Plus or minus 25°F
B. Plus or minus 5% of full scale (0 to 10% scale)

The incinerator monitors shall be capable of continuous measurement and readout of the monitor values shall be located such that an inspector/operator can at any time safely read the output. The measurement need not be

continuously recorded. All monitors shall be calibrated against a primary standard at least once every 180 days. The calibration procedure for the temperature monitor shall be in accordance with 40 CFR 60, Appendix A, Method 2, paragraph 4.3. The calibration procedure for the excess air monitor shall be in accordance with 40 CFR 60, Appendix A, Method 3.

5. The incinerator shall be designed with a minimum effective temperature residence time of 1.0 second at maximum temperature and flow rate.

Building - 8162 R & D Facility For New Processes

1. The installations in building 8162 for research and development of new products and processes shall consist of the following equipment:

   A. A pilot size fiber line with various ovens, furnaces, and process as necessary for research and development purposes

   B. John Zink, McGill, or equivalent incinerator system rated at 750,000 BTU/hr with a 3/1 turndown.

2. The emissions from each high temperature nitrogen purged carbonization furnace shall have a burner box (a pilot light shall be included in the burner box to insure that combustion takes place).

4. Emissions from the low temperature carbonization furnaces shall be controlled by a John Zink, McGill, Inc., or equivalent fume incinerators. The following operating parameters for the incinerator shall be maintained within the indicated ranges:

   A. Temperature - 1400^{o}F minimum to 1700^{o}F maximum
   B. Percent of excess O_2 - 6% minimum

5. The incinerators shall be monitored with equipment located such that an inspector/operator may at any time safely read the output. The measurements shall be accurate to within the following ranges:

   A. Plus or minus 25^{o}F
   B. Plus or minus 5% of full scale (0 to 10% scale)

   The incinerator monitors shall be capable of continuous measurement and readout of the monitor values located such

that an inspector/operator can at any time safely read the output. The measurement need not be continuously recorded. All monitors shall be calibrated against a primary standard at least once every 180 days. The calibration procedure for the temperature monitor shall be in accordance with 40 CFR 60, Appendix A, Method 2, paragraph 4.3. The calibration procedure for the excess air monitor shall be in accordance with 40 CFR 60, Appendix A, Method 3.

6. The incinerator shall be designed with a minimum residence time of 1.0 second at maximum temperature and flow rate.

7. The facility shall be used for development of new fiber products and new process development only and not as a production facility.

2.b.U Interstate Brick Company

1. Interstate Brick Company, located at 9780 South 5200 West, West Jordan, Utah, shall operate the brick/tile production plant according to the following conditions.

2. The installations shall consist of only the following equipment:

   A. Tunnel Kiln #1
   B. Tunnel Kiln #3
   C. Tunnel Kiln #4
   D. Shuttle Kiln (#5)
   E. Grizzly Hopper
   F. Primary Crusher
   G. Secondary Crusher/Grinding
   H. Screens
   I. 2 Lime Silos
   J. Clay Storage Piles
   K. Miscellaneous Diesel Equipment

3. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Tunnel Kiln #1;

1.	PM_{10}	2.6	lbs/hr	0.028	grains/dscf
2.	NO_x	2.5	lbs/hr	32	ppmdv

   B. Tunnel Kiln #3

1.	PM_{10}	3.1	lbs/hr	0.028	grains/dscf
2.	NO_x	3.0	lbs/hr	33	ppmdv

   C. Tunnel Kiln #4

1.	PM_{10}	12.3	lbs/hr	0.039	grains/dscf
2.	NO_x	6.0	lbs/hr	23	ppmdv

   D. Shuttle Kiln

1.	PM_{10}	1.6	lbs/hr	0.028	grains/dscf
2.	NO_x	0.18	lbs/hr	3.9	ppmdv

   E. Primary Crusher Baghouse Vent

1.	PM_{10}	0.49	lbs/hr	0.016	grains/dscf

F. See note at end of subsection on need to perform SO_2 testing

4. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see paragraph 2.1.A. for more details), and as directed by the Executive Secretary:

Point		Method	Retest every
A.	Tunnel Kiln #1		
1.	PM_{10}	201/201a	Test if Directed
2.	NO_x	7	Test if Directed
B.	Tunnel Kiln #3		
1.	PM_{10}	201/201a	Test if Directed
2.	NO_x	7	Test if Directed
C.	Tunnel Kiln #4		
1.	PM_{10}	201/201a	3 years
2.	NO_x	7	3 years
D.	Shuttle Kiln		
1.	PM_{10}	201/201a	Test if Directed
2.	NO_x	7	Test if Directed
E.	Primary Crusher		
1.	PM_{10}	201/201a	3 years

5. The following limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

A. Raw Clay Consumption:

120 tons/hr
1,051,200 tons/yr

B. Tunnel Kiln #1:

5000 hours/yr
68,250 tons of brick/year

C. Tunnel Kiln #3:

148,044 tons of brick/year

D. Tunnel Kiln #4:

291,288 tons of brick/year

E. Shuttle Kiln #5:

5000 hours/yr
5000 tons of tile/year

Records of production shall be kept for each of the above listed sources.

6. The moisture content of the clay feed shall be maintained at a value of no less than 4.0% by weight. The silt content of the clay shall not exceed 18.0% by weight without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

7. The owner/operator shall use only natural gas as fuel in the brick/tile kilns. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR.

8. Annual emissions for this source (the entire plant) are hereby established at 96 tons/yr for PM_{10}, 0.04 tons/yr for SO_2, and 46 tons/yr for NO_x.

Note: There is a need to have Interstate Brick perform stack testing of their kilns while processing different type brick/tile materials. The SO_2 emission levels are not known as of this time of PM_{10} SIP finalization. Interstate Brick shall conduct the adequate testing using proper EPA Test Methods to quantify SO_2 emission levels from manufacturing operations and submit a notice of intent to the executive secretary not later than September 1, 1992 in accordance with Subsection R307-1-3.1.1, UACR to reduce SO_2 emissions as required by the SIP (RACT). The modifications to reduce SO_2 emissions shall be completed not later than December 10, 1993.

2.b.V Kennecott Utah Copper Smelter

2.b.V.A General Conditions

1. The approved installations shall consist of only the following equipment:

   A. Smelter vessels (3 reactors, 4 converters)
   B. Acid plant(s)
   C. Smelter Powerhouse (3 boilers, 2 superheaters)
   D. Rotary Concentrate Dryers
   E. Anode Furnaces (3)
   F. Crushing and grinding operations
   G. Miscellaneous diesel equipment
   H. Support facilities

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Smelter Powerhouse, total

      NO_x - 20.8 lb/hr 80.9 ppmdv

   B. Rotary Concentrate Dryer Stack

      PM_{10} - 4.2 lb/hr 0.018 gr/dscf
      NO_x - 7.1 lb/hr 67 ppmdv

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, and as directed by the Executive Secretary:

	Test Every
Rotary Concentrate Dryer	
PM_{10}	1 year

4. Visible emissions from the following emission points shall not exceed the following values:

   A. Smelter Powerhouse 10% opacity

   B. Rotary Concentrate Dryer Stack 15% opacity

   C. All Baghouses 10% opacity

D. Crushing and Screening Operations 15% opacity

E. Fugitive Dust 20% opacity

5. Opacity observations of emissions from all stationary sources other than the main stack shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9.

6. Water sprays, chemical dust suppression sprays or dust collectors shall be operated if necessary at the following points to maintain less than 15% opacity:

A. All crushers
B. All screens
C. All crushed slag conveyor transfer points

7. The owner/operator shall use only natural gas as fuel in the sources listed below:

A. Powerhouse
B. Rotary Dryer

Fuel consumption shall not exceed the following level from the above sources consolidated:

Natural gas 1100 million cu-ft/calendar yr

Fuel oil (#2) or lighter shall be permitted in the event of a curtailment of natural gas. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR. Fuel consumption shall be determined by plant records.

8. Owner/operator shall employ the following measures for reducing escape of pollutants to the atmosphere and to capture emissions and vent them through a stack or stacks:

A. Maintenance of all ducts, flues, and stacks in such a fashion that leakage of gases to the ambient air will be prevented to the maximum extent practicable;

B. Operation and maintenance of primary and secondary collection systems in good working order;

C. Making available to the Executive Secretary the preventive/routine maintenance records for the primary and secondary hooding systems; dust collection mechanism of waste heat boilers, dropout chambers and shot coolers; hot cyclones; and dry electrostatic

precipitators;

D. Daily observation of process units;

E. Daily inspection of gas handling systems;

F. Monthly monitoring of SO_2 emission concentrations at all preheater stacks and at the waste heat boiler vents during periods of operation of these sources;

G. Maintenance of gas handling systems, available on call on a 24-hour basis;

H. Operation and maintenance of an upwind/downwind fugitive monitoring system (EPA 600/2-76-089a, April 1976);

I. Contained conveyance of acid plant effluent solutions.

Within 90 days of Committee approval of these conditions, Kennecott will submit to the Bureau examples of the forms and records that will be used to comply with Subsection IX.H.2.b.V.A.8.D, IX.H.2.b.V.A.8.E, and IX.H.2.b.V.A.8.F above.

9. Compliance with the main stack mass emission limit for particulate matter of condition IX.H.2.b.V.B(1A) shall be demonstrated using the smelter main stack continuous particulate sampling system to provide a 24-hour value. Collected data shall be available for inspection daily, and summary of 24 hour averages shall be submitted to the Executive Secretary monthly (within 15 days of end of month).

10. To demonstrate compliance with the main stack mass emission limits for SO_2 of condition IX.H.2.b.V.B(1B), Kennecott shall calibrate, maintain and operate the measurement system for continuously monitoring sulfur dioxide concentrations and stack gas volumetric flow rates in the main smelter stack. The continuous SO_2 monitoring system described in this subsection shall meet the following requirements:

A. Kennecott shall comply with all applicable parts of Subsection R307-1-4.6, UACR "Continuous Emission Monitoring Systems Program", including the requirements for annual Relative Accuracy Test Audits and quarterly Relative Accuracy Audits or Cylinder Gas Audits. In addition, Kennecott shall conduct quarterly Calibration Error, Calibration Drift, and Zero Drift Tests (24

hour, 5 data points). The required Relative Accuracy Test Audits, Relative Accuracy Audits, Calibration Error Tests, Zero and Calibration Drift Tests shall be conducted following Procedures contained in Appendix D, Part 52, Title 40, CFR. The required Cylinder Gas Audits shall be conducted following procedures contained in 40 CFR Part 60, Appendix F. All audit and test results shall be submitted to the Executive Secretary, Utah Air Conservation Committee (UACC) within 30 days after the audit or test is completed.

B. Kennecott shall perform Appendix E, Part 52, Title 40, CFR Performance Specification procedures on the stack gas flow rate measurement system, if directed by the Executive Secretary, in the event that the results of the quarterly and annual tests required by condition IX.H.2.b.V.A.10.A demonstrate that the SO_2 monitoring system is not performing properly.

C. Kennecott shall maintain a record of all measurements required by this condition IX.H.2.b.V.A.10. Measurement results shall be expressed as pounds of sulfur dioxide emitted per hour calculated at the end of each day for the preceding 24 hours, and calculated at the end of each hour for the preceeding three hour period. Results for each measurement or monitoring system and reports evaluating the performance of such systems shall be summarized and shall be submitted to the Executive Secretary within 15 days after the end of each month. The Executive Secretary, in consultation with Kennecott, shall determine an acceptable format for reporting such results and system evaluations. The following measurements, expressed as lbs/hr sulfur dioxide, shall also be summarized and submitted in such report(s):

1. The total number of hourly periods during the month in which measurements were not taken.

2. For any periods where loss of measurement is greater than 3 continuous hours, the reason for loss of measurement in each period.

3. The date(s) on which 24 hour emissions averages exceeded the applicable emission level in condition IX.H.2.b.V.A.2.B in the month being reported and the number of such exceedances.

4. All conversion values used to derive the 24 hour

and 3-hour average emissions for SO_2, including temperature and differential pressure of stack gases.

D. Failure of Kennecott to measure at least ninety-five percent (95%) of the hours during which emissions occurred in any month in accordance with the requirements of this subsection, or failure to measure, in accordance with the requirements of this subsection, any 18 consecutive hours of emissions data shall constitute a violation of condition IX.H.2.b.V.A.10. Any hour for which the measurements comply with UACR R307-1-4.6 shall be considered as measured. Calibration shall be performed once per day; the hour during which calibration is performed shall be considered as measured if at least 40 minutes of data are measured for that hour. Any hours for which the emissions data are greater than 20% in error will be considered to have not been measured for the purposes of condition IX.H.2.b.V.A.10. The Executive Secretary may grant exemptions to the requirements of condition IX.H.2.b.V.A.10 if unusual circumstances, not to include malfunction of any of the monitoring instrumentation, arise which prevent Kennecott from obtaining hourly measurements of emissions in accordance with condition IX.H.2.b.V.A.10.

E. During periods of malfunctioning or maintenance of the stack gas temperature and velocity measurement instrumentation, owner/operator may estimate stack gas flow rate. Such estimates will be considered as measurements for the purpose of condition IX.H.2.b.V.A.10. Calculations used to derive the estimated flow rate and a list of the periods where stack gas flow rate was estimated in each month shall be submitted with the monthly data reports. No more than 10% of the flow rates in any one month may be estimated.

F. For data, reports, or results required to be submitted to the Executive Secretary pursuant to condition IX.H.2.b.V.A.10, unless, within 30 days of the time such data results are submitted, the owner/operator or the Executive Secretary provides evidence that the data, results, or reports or any part thereof are greater than 20% in error; such data, reports or results will be deemed to be verified and accepted as valid and not subject to challenge and shall be used by the Executive Secretary and the Committee in

determining compliance with condition IX.H.2.b.V.A.2.B.

11. Compliance with the main stack opacity limits set forth in condition IX.H.2.b.V.A.B(2) and IX.H.2.b.V.C(5) shall be demonstrated with a continuous opacity monitor on the main stack, which shall comply with the specifications of Subsection R307-1-4.6 of the UACR.

12. Startup and Shutdown:

    A. All gases produced during smelting which enter the primary hoods shall pass through an on-line sulfuric acid plant. If on-line acid plant capacity is degraded, the owner/operator shall adjust blowing rates, modify production sequence, or curtail production by rolling out vessels and cease the pumping of air into them until primary hood emissions can all pass through an on-line acid plant. If all on-line acid plant capacity is degraded, the owner/operator shall roll out all vessels and cease the pumping of air into them. No vessel shall be rolled back into the primary hoods again until such time as the first pass catalyst bed reaches 360°C (680°F).

    If any charged converter vessel is required to be rolled out for more than 16 hours, the owner/operator may continue operation of the charged vessel only until that charge is completed. Failure to comply with these curtailment requirements shall constitute a violation of condition IX.H.2.b.V.A.12.

    B. No acid plant may be in startup/shutdown mode for more than 5 % of the hours when the smelter is operating (i.e. when air is being pumped into one or more smelting vessels). Compliance with this condition in no way releases the owner or operator from any liability for compliance with any other applicable conditions.

    For an acid plant, "startup/shutdown mode" shall be defined as:

    (a) the time period beginning when on-line acid plant capacity is degraded and ending when the owner/operator completes the applicable operating changes described in the second and third sentences in paragraph 2.2.V.A.12(A); and

    (b) the time period beginning with startup of the acid

plant and ending with achievement of steady-state acid plant operations, not to exceed 6 hours.

Except as provided in Condition IX.H.2.b.V.A.12.C(2), all emissions during acid plant startup/shutdown mode shall be included in calculating compliance with emission limits.

C. If an acid plant has been off-line for more than 18 hours, the following conditions apply:

(1) The owner/operator shall notify the Executive Secretary by telephone when acid plant startup begins.

(2) Emissions during the first 4 hours of acid plant startup shall not be included in calculating compliance with either the 3-hr, or the 24-hr average emission limits.

D. Scheduled acid plant overhauls must be planned for the annual period from March 1 through October 31.

E. Within 90 days of the effective date of this section, owner/operator shall provide to the Executive Secretary for his information a plan for minimizing emissions during startup.

13. This section (IX.H.2.b.V.A) is effective upon adoption by the Committee.

2.b.V.B Additional Conditions

1. Emissions to the atmosphere from the smelter main stack shall not exceed the following rates and concentrations:

   A. PM_{10} - 400 lb/hr, 24 hour average (calendar day) as defined pursuant to condition IX.H.2.b.V.C(5D); 200 lb/hr, annual average, as defined pursuant to condition IX.H.2.b.V.C(5D).

   B. SO_2 - 6,450 lb/hr, 3 hour average (rolling); 5,700 lb/hr, 24 hour average (calendar day); 3,240 lb/hr, annual average

   C. Acid plant tail gas - 1200 lb SO_2 /hr measured as a six hour average, 650 ppmvd measured as a six hour average; 1,950 lb SO_2 /hr measured as a three hour average (rolling), 1,050 ppmdv mesured as a three hour average (rolling).

   The limits above are based upon double contact acid plant technology. In the event of construction or permitting delays associated with new process or control equipment, during the performance test period under 40 CFR 60.8, or otherwise as authorized by the Executive Secretary, Kennecott may comply with the emission limits in this paragraph by any combination of control technologies, production methods or work practices which achieves the emissions in subparagraphs A and B to the extent allowable by the Federal Clean Air Act. Kennecott shall submit progress reports to the Executive Secretary once per quarter until completion of construction. If delays are experienced which may affect the date of plant startup, Kennecott shall so note in the quarterly report.

2. Visible emissions from main tall stack and smelter building roof vents shall not exceed 20% opacity based upon Method 9, provided that:

      A. The opacity limit is applicable as defined in 40 CFR 60.11(c);

   B. Kennecott fails to submit a petition as described in 40 CFR 60.11(e)(6);

   C. Kennecott fails to make the demonstration required in 40 CFR 60.11(e)(7) and (8).

3. Compliance with the mass emission limit for SO_2 in acid

plant tail gas set forth in condition IX.H.2.b.V.B(1C) shall be demonstrated with a continuous emission monitor on the tail gas duct(s) of the acid plant(s). The CEM system installed on the acid plant(s) shall report 24 hour averages and comply with the specifications of Subsection R307-1-4.6 of the UACR.

4. Annual emission for this source (the entire smelter plant) are hereby established at 1340 tons/yr for PM_{10}, 18,575 tons/yr for SO_2, 145 tons/yr for NO_x.

5. The effective date of this section IX.H.2.b.V.B shall be determined in accordance with Subsections R307-1-3.2.5 and R307-1-3.2.6 of the UACR; with the exception of the three-hour SO_2 limits on the acid plant tail-gas and the tall stack.

6. The effective date of the three-hour SO_2 limits on the acid plant tail-gas and the tall stack shall be as expeditiously as practicable, but no later than November 15, 1995.

2.b.V.C Temporary Conditions

1. Visible emissions from the following emission points shall not exceed the following values:

   A. Main stack opacity, as measured by CEM, limit and averaging period to be determined according to Condition IX.H.2.b.V.C(5A) and IX.H.2.b.V.C(5B)

   B. Smelter building roof vents to be determined according to Condition IX.H.2.b.V.C(5F)

   C. Reactor vent stacks to be determined according to condition IX.H.2.b.V.C(5E)

   Note: When the opacity limitations are determined for the sources in IX.H.2.b.V.C.1.A, IX.H.2.b.V.C.1.B, and IX.H.2.b.V.C.1.C, the opacity limitations shall then be established by order of the committee.

2. Emissions to the atmosphere from the smelter main stack shall not exceed the following rates:

   A. TSP - 545 lb/hr, 24 hour average (calendar day);
   B. SO_2 - 8,979 lb/hr, 24 hour average (calendar day).

3. For control of smelter emissions other than from the main stack, the owner/operator shall:

   A. By December 31, 1991, install redesigned primary hooding at reactors #2 and #3 slag skimming and matte tapping operations.

   B. By December 31, 1991, install redesigned primary hooding and replace flues on converters.

   C. By December 31, 1991, install automatic tuyere punchers on reactors #2 and #3.

   D. By December 31, 1991, replace preheaters on acid plants #7 and #8.

   E. By December 31, 1991, install hoods over the #2 and #3 reactor bath measuring stations.

   F. By December 10, 1993, capture emissions from reactor vessel vents into secondary capture system.

4. Within 90 days after SIP promulgation by the committee,

Kennecott shall submit to the Executive Secretary:

A. A complete schedule for design and construction required for compliance with the conditions IX.H.2.b.V.C(3A-F).

B. A notice of intent to construct in accordance with the procedures of Subsection R307-1-3.1, UACR for compliance with the conditions IX.H.2.b.V.C(3E) and IX.H.2.b.V.C(3F).

5. The studies and reports listed below shall be accomplished to determine the appropriate emission limitations and to determine if 20% opacity limitations are achievable while appropriate emission control devices and work practices are observed to be in effect, and smelting operations are within 90% of maximum production rates achieved in the previous 3 years. All methods of determining control equipment effectiveness, stack testing methods and study protocols shall be determined in a pretest conference between Kennecott and representatives of the Executive Secretary at least 45 days prior to any studies. The studies shall be performed, the results submitted to the Executive Secretary of the Utah Air Conservation Committee, and the limitations established within the indicated time periods following the designated milestones:

	Emission Point	Item to be Determined	Test Report and New Limitations Due Within
A.	Main stack	Interim CEM opacity limit & averaging period	6 months after promulgation of SLCo SIP by UACC
B.	Main stack	Interim CEM opacity limit & averaging period	6 months after capture of emissions from reactor vessel vents into secondary capture system
C.	Main stack	Final CEM opacity limit & averaging period	6 months after new acid plant becomes operational

D.	Main stack	PM_{10}/TSP ratio	6 months after new acid plant becomes operational
E.	Reactor vent stacks	Interim opacity decay limits	6 months after promulgation of SLCo SIP by UACC
F.	Hot metals building roof vents	Interim opacity	6 months after promulgation of SLCo SIP by UACC
G.	Hot metals modifications roof vents	Final opacity	6 months after primary and secondary ducting building become operational

6. Kennecott shall monitor acid plant sulfur recovery efficiency, and shall provide the following data to the Executive Secretary in the monthly report required by condition IX.H.2.b.V.A(10) including the following parameters:

   A. Total gas volume produced in DSCF (68 ^{o}F, 29.92 inches Hg, Dry)

   B. Concentration of SO_2 in mole percent

   C. Quantity of H_2SO_4 produced

   D. Availability of each acid plant in total hours for the month

   E. Owner/operator shall report to the Executive Secretary the percent of time in startup/shutdown mode for each acid plant in the monthly report required by condition IX.H.2.b.V.A(10). Percent of time in startup/shutdown mode shall be defined by the following equation for each plant:

$$\frac{\text{Hours that the acid plant is in startup/shutdown mode} \times 100}{\text{hours smelting time}^{*}}$$

** Definition: Smelting time = When air is being blown into the smelting vessels.*

7. This section IX.H.2.b.V.C is effective upon adoption by the committee and shall terminate on the effective date of section IX.H.2.b.V.B.

2.b.W Kennecott Utah Copper - Bingham Canyon Mine

1. The approved installations shall consist of only the following equipment located at the site:

   A. Crushers
   B. Conveyors
   C. Haul Trucks
   D. Loaders
   E. Graders
   F. Bulldozers, Scrapers
   G. Drills
   H. Lime Silo
   I. Water Trucks
   J. Utility Vehicles
   K. Diesel Locomotives
   L. Various small engine powered mobile equipment

2. Total material moved (ore and waste) shall not exceed 150,500,000 tons per 12-month period without prior approval in accordance with Subsection R307-1-3.1, UACR. Compliance with the throughput limitation shall be determined on a rolling-annual total reported on a monthly basis. On the first day of each new month, a new 12-month total shall be calculated using the previous 12 months. Records of throughput shall be kept for all periods when the mine is in operation. Records of throughput shall be made available to the Executive Secretary of the Utah Air Conservation Committee upon request, and shall include a period of two years ending with the date of the request. Total material moved shall be determined by the use of daily haulage reports.

3. Visible emissions from the following emission points shall not exceed the following values:

   A. Crushers - 7% opacity
   B. Conveyor transfer points equipped with baghouses - 7% opacity
   C. All other conveyor transfer points - 10% opacity
   D. Lime silo - 10% opacity
   E. Unpaved ore haul roads, front-end loading, truck dumping, stockpiles, blasting area - minimize emissions
   F. Drilling - 10% opacity
   G. All other points - 10% opacity

   Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9.

4. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. In-pit Crusher Baghouse Vent

PM_{10}	1.77 lbs/hr	0.016 grains/dscf

   B. Two (2) Controlled Drop Point Baghouse Vents Near Copperton

PM_{10}	0.22 lbs/hr	0.016 grains/dscf

5. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, and as directed by the Executive Secretary:

   A. In-pit Crusher Baghouse Vent - PM_{10} 201/201a (Test every 3 years)

   B. Two (2) Controlled Drop Point Baghouse Vents Near Copperton - PM_{10} 201/201a, (Test every 3 years)

6. The height of the mine waste dump lift shall not exceed 1000 feet.

7. The owner/operator shall provide to the Executive Secretary for approval a plan to keep trigger opacity on active waste slopes at less than 20% opacity. Average opacity emissions from the active waste dump push slopes shall not exceed 20%. To insure that 20% opacity is not exceeded, the waste dump slopes shall be monitored by Kennecott.

   If the 20% trigger opacity limitation cannot be met on any waste dump slope, action shall be initiated to prevent excesses of 20% trigger opacity by applying additional and/or alternate control measures, as defined in the fugitive dust control plan, as approved by the Executive Secretary.

   Trigger opacity observations shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9 with the following exceptions:

   Opacity observations shall only be taken while a batch of

dumped material is in motion.

One reading shall consist of an accumulation of three (3) minutes of trigger opacity observations taken over the material in motion.

8. If Kennecott or the Executive Secretary, UACC determines that the trigger opacity is being exceeded and existing alternate control measures have been exhausted, Kennecott shall meet with the Executive Secretary, or his staff, to discuss additional or modified fugitive dust controls/operational practices and an implementation schedule for such within five working days after verbal notification by either party.

9. Kennecott Utah Copper will use frequent watering or approved chemical dust suppressant to control road dust from all trafficked roads and areas in the mine. Kennecott Utah Copper will submit an annual road dust control report, in conjunction with the fugitive dust control plan, by February 1 of each calendar year, containing as a minimum the following:

   A. A description of what dust control measures are planned for the coming year.

   B. A report of what dust control measures were actually completed during the past year.

   C. Specific elements of the report will include:

      1. A map of all trafficked areas and roads associated with the mine, indicating which areas are planned for treatments with water and/or chemical dust suppressant.

      2. A description of what chemical dust suppressant will be used if used and how it will be applied (application rate, application frequency, dilution rate, special application procedure, scarification, etc.).

      3. A list of equipment dedicated either full or part time to work area and road dust control (# of water trucks, water capacity, # graders, etc.).

      4. A quantification of how much dust suppressant (gallons, tons) was applied the previous year, and when and where it was applied.

5. A quantification of how much watering was accomplished the previous year (gallons, water truck operating hours).

10. The following operating parameters shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

    A. Maximum daily total mileage for haul trucks (30,000 miles)

    B. Minimum design payload per haul truck (150 tons)

    C. Maximum number of wheels per haul truck (6 wheels)

    D. Any new haul trucks purchased will be rated at the indicated minimum net payload weight (190 tons)

11. Wet drilling shall be performed for all blast holes.

12. The lime silo shall be equipped with a fabric type bin vent control unit.

13. All uncovered storage piles shall be sprayed with water or dust suppressants as dry conditions warrant or as determined necessary by the Executive Secretary.

14. The sulfur content of diesel fuel oil burned in the equipment engines shall not exceed 0.21 pound of sulfur per million BTU heat input as determined by ASTM Method D-4294-89. (This represents 0.4% sulfur by weight in the fuel oil, 137,000 btu/gal, and 7.05 lb/gal). After December 31, 1993, the sulfur content of diesel fuel oil burned in the equipment engines shall not exceed 0.03 pound of sulfur per million BTU heat input as determined by ASTM Method D-4294-89. (This represents 0.05% sulfur by weight in the fuel oil, 137,000 btu/gal, and 7.05 lb/gal). The sulfur content shall be tested if directed by the Executive Secretary. Fuel consumption shall not exceed 27,500,000 gal/yr. Fuel consumption shall be determined by mine records of diesel fuel oil purchased.

15. In addition to the requirements of this approval order, all provisions of 40 CFR 60, NSPS Subparts A and LL apply to the mineral processing portion of this source.

16. For sources which are subject to NSPS, visible emission observations which are performed during the initial

compliance inspection shall consist of 30 observations of six minutes each in accordance with 40 CFR 60, Appendix A, Method 9. It is the responsibility of the owner/operator of the source(s) to supply these observations to the Executive Secretary. Emission points which are subject to NSPS shall include the following:

A. All ore crushers
B. All conveyor transfer points associated with the crushing and conveying of ore

17. All installations and facilities authorized by this approval order shall be adequately and properly maintained.

18. Annual emissions for this source (the entire Bingham Canyon pit and ore handling operations) are currently calculated at 2801 tons/yr for PM_{10}, 78 tons/yr for SO_2, 4048 tons/yr for NO_x.

2.b.X Kennecott Utah Copper - Copperton Concentrator

1. The approved installations shall consist of the following emission points located at the site:

   A. Feed Molybdenite Dryers with Venturi Scrubbers
   B. Feed Molybdenite Dryer Heaters
   C. Molybdenite Heat Treater with Venturi Scrubber
   D. Molybdenite Heat Treater Heater
   E. Product Molybdenite Dryers with Venturi Scrubbers
   F. Steam Boiler (10,000 lb/hour)
   G. Molybdenite Storage Bins with Baghouse
   H. Molybdenite Storage/Loading Facilities with Baghouses
   I. Soda Ash Storage Silo with Baghouse
   J. Vacuum Cleaning System with Baghouse
   K. Other Associated Equipment

2. Visible emissions from the following emission points shall not exceed the following values:

   A. Baghouse Stack on Molybdenite Storage Bin (Subject to NSPS, Subpart LL) - 7% opacity
   B. Baghouses on Molybdenite Storage/Loading Facilities (subject to NSPS, Subpart LL) - 7% opacity
   C. Fugitive emission points (subject to NSPS, Subpart LL) - 10% opacity
   D. All other points - 10% opacity

3. Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9.

4. In addition to the requirements of this approval order, all provisions of 40 CFR 60, NSPS, Subparts A and LL apply to the mineral processing portion of this source.

5. All installations and facilities authorized by this approval order shall be adequately and properly maintained.

6. The following operating parameters shall be continuously monitored:

   A. Pressure drop (± one inch of water) through every wet scrubber
   B. Liquid flow rate (± 5% of design flow rate) through every wet scrubber
   C. pH (± 0.5 s.u.) in flotation circuit upstream of leach circuit

All of the wet scrubbers shall comply with 40 CFR 60.384 and 60.385.

7. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

A. Feed Molybdenite Dryers

PM_{10}	0.25 lbs/hr	0.016 grains/dscf

B. Molybdenite Heat Treater

1.	PM_{10}	0.20 lbs/hr	0.016 grains/dscf
2.	SO_2	26.2 lbs/hr	1,455 ppmdv

C. Product Molybdenite Dryers

PM_{10}	0.15 lbs/hr	0.016 grains/dscf

D. Molybdenite Storage Bins

PM_{10}	0.21 lbs/hr	0.016 grains/dscf

E. Molybdenite Storage and Loading Facilities

PM_{10}	0.07 lbs/hr	0.016 grains/dscf

8. Stack testing to show compliance with the emission limitation of condition IX.H.2.b.X.7 shall be performed in accordance with 40 CFR 60, Appendix A; 40 CFR 51 Appendix M (see IX.H.2.a.A for more details) and as directed by the Executive Secretary. The following emission points shall be tested for the indicated air contaminants by the indicated test method at the indicated schedule:

Source	Pollutant	Method	Test Every
Feed Molybdenite Dryers	PM_{10}	5	Test if directed
Molybdenite Heat Treater	PM_{10}	5	Test if directed
	SO_2	CEM UACR4.6	5 years Relative Accuracy Test
Product Molybdenite Dryers	PM_{10}	5	Test if directed

Molybdenite Storage Bins	PM_{10}	201/201a Test if directed
Molybdenite Storage and Loading Facilities	PM_{10}	201/201a Test if directed

9. The owner/operator shall use only natural gas or LPG as a fuel in the combustion sources. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR.

10. For sources which are subject to New Source Performance Standards (NSPS), visible emission observations which are performed during the initial compliance inspection shall consist of 30 observations of six minutes each in accordance with 40 CFR 60, Appendix A, Method 9.

    It is the responsibility of the owner/operator of the source(s) to supply these observations to the Executive Secretary. Emission points which are subject to NSPS shall include the following:

    A. Molybdenite Heat Treater
    B. Feed Molybdenite Dryers
    C. Product Molybdenite Dryer
    D. Storage and shipping facilities

11. The pH of the cyanide leach circuit shall be maintained at a value of no less than 9.5.

12. Natural gas consumption shall not exceed the following limitations for the equipment listed:

Molybdenite Heat Treater	4.8×10^6 SCF per 30 days
Feed Molybdenite Dryers (each)	4.1×10^6 SCF per 30 days
Steam Boiler	12.0×10^6 SCF per 30 days

    Records of consumption shall be kept for all periods when the plant is in operation. Records of consumption shall be made available to the Executive Secretary upon request and shall include a period of two years ending with the date of the request. Natural gas shall be metered at each location.

13. The Molybdenite Heat Treater shall be operated as a dryer with water as the Scrubbing Solution in the venturi scrubber. When used as a heat treater, the following measures shall be taken:

A. The SO_2 scrubber will be fully activated.

B. The installed continuous emissions monitor (CEM) shall be used to determine compliance with the SO_2 limitation (26.2 lb/hr) on an hourly basis.

C. The monitor shall meet all requirements listed in Subsection R307-1-4.6, UACR.

D. Quarterly reports of the results of continuous emissions monitoring shall be submitted to the Executive Secretary during any quarter in which the heat treatment process was used. The reports shall include all excess emission episodes.

E. The CEM shall be calibrated and the results reported on the following schedule:

1. Quarterly calibration results submitted with the quarterly reports.

2. Calibration of the CEM within 24 hours of any transition of the heat treater from dryer mode to heat treater mode or heat treating operations shall be discontinued.

F. All continuous monitoring data shall be kept for a minimum of two years after the date on which emissions occurred and shall be made available to the Executive Secretary upon request.

14. Annual emissions for this source (the entire plant site) are currently calculated at 5.1 tons/yr for PM_{10}, 114.9 tons/yr for SO_2, 20.6 tons/yr for NO_x.

2.b.Y Kennecott Utah Copper Refinery, Garfield, Utah

1. The installations shall consist of only the following emission points:

   A. Anode furnace with baghouse
   B. Anode furnace charge slot with baghouse
   C. Selenium extraction process
   D. 2 Dore' furnaces with a wet scrubber and an electrostatic precipitator
   E. Dore' secondary hoods with a baghouse
   F. Dore' slag crusher with baghouse
   G. Selenium refining process with electrostatic precipitator
   H. 2 boilers, rated at 67.4 mmBtu/hr heat input each
   I. Other associated equipment

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Anode furnace with a baghouse;

PM_{10}	0.88 lbs/hr	0.016 grains/dscf

   B. Anode furnace charge slot with a baghouse;

PM_{10}	0.62 lbs/hr	0.016 grains/dscf

   C. Selenium extraction process;

PM_{10}	0.38 lbs/hr	0.035 grains/dscf

   D. Dore' furnace electrostatic precipitator;

PM_{10}	2.85 lb/hr	0.035 grains/dscf

   E. Dore' secondary hood baghouse;

PM_{10}	2.70 lb/hr	0.016 grains/dscf

   F. Dore' slag crusher baghouse;

PM_{10}	2.70 lb/hr	0.016 grains/dscf

   G. Boilers;

1)	PM_{10}	0.038 lb/mmBtu heat input
2)	SO_2	0.96 lb/mmBtu heat input
3)	NO_x	0.6 lb/mmBtu heat input

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see paragraph 2.1.A for more details), and as directed by the Executive Secretary:

	Method	Test Every
A. Anode furnace with a baghouse;		
PM_{10}	201/201a	Test if directed
B. Anode furnace charge slot with a baghouse;		
PM_{10}	201/201a	Test if directed
C. Selenium extraction process;		
PM_{10}	201/201a	Test if directed
D. Dore' furnace electrostatic precipitator;		
PM_{10}	201/201a	3 years
E. Dore' secondary hood baghouse;		
PM_{10}	201/201a	Test if directed
F. Dore' slag crusher baghouse;		
PM_{10}	201/201a	Test if directed
G. Boilers;		
PM_{10}	201/201a	Test if directed
SO_2		Test if directed
NO_x	7	Test if directed

4. Visible emissions from the following emission points shall not exceed the following values:

A. Anode furnace baghouse	10% opacity
B. Anode furnace charge slot baghouse	10% opacity
C. Selenium extraction process	20% opacity
D. Dore' furnace electrostatic precipitator	20% opacity
E. Dore' secondary hood baghouse	10% opacity
F. Dore' slag crusher baghouse	10% opacity
G. Selenium refining process electrostatic precipitator	15% opacity
H. 2 boilers	20% opacity
I. Other associated equipment	20% opacity

5. The owner/operator shall operate the selenium extraction process in a manner which minimizes the emissions of SO_2. The owner/operator shall perform the following measurements to verify the SO_2 emission rate from the circulation tank stack:

A. Continuously monitor the SO_2 addition rate

B. Monitor the raw material feed rate whenever a charge of de-copperized slimes is added to the selenium extraction process

C. Analyze on a daily basis for soluble selenium (H_2SeO_3) in the circulating solution

D. Monitor the SO_2 concentration in the circulation tank stack (continuous monitoring is not required).

The above measurements shall be taken at least once per day. All data from these measurements shall be kept for a period of two years from the date of the measurement. For the monitor on the stack, the following calibration and maintenance procedures shall be performed:

A. Weekly calibration of the instrument against a span gas of standard concentration which is applicable to this source

B. Quarterly audits of the instrument against three span gases in accordance with 40 CFR 60, Appendix B, Specification 2.

6. The Dore' furnace secondary hood baghouse shall be capable of handling 25,000 acfm. The air/cloth ratio shall not exceed 5.56:1. All exhaust emissions from the Dore' secondary hoods shall pass through the baghouse before being vented to the atmosphere.

7. Fuel consumption for all stationary sources shall not exceed 601,000 million Btu per year, of which no more than 293,000 million Btu shall be in the form of coal. No more that 6,000 million Btu per year of fuel oil #2 or lighter may be burned in the copper melting barrel furnace and arc furnace preheater.

8. The owner/operator shall use fuels in the sources as indicated below:

Source	Before Nov. 1, 1992; March 1 through Oct. 31 of each year after 1992 (three seasons)	Winter (November 1 through the last day in February) after October 31, 1992	
		Normal Natural gas supply	When the natural gas supply is interrupted by supplier of transporter
2 Boilers	Coal, #2 Fuel Oil or Lighter, LPG, or Natural Gas	Natural Gas or LPG	Coal, #2 Fuel Oil or Lighter, LPG, or Natural Gas
Copper Melting Barrel Furnace and Arc Furnace Preheater	#2 Fuel Oil or Lighter, LPG, or Natural Gas	#2 Fuel Oil or Lighter, LPG, or Natural Gas	#2 Fuel Oil or Lighter, LPG, or Natural Gas
All Other Stationary Fuel Burning Sources	Natural Gas or LPG	Natural Gas or LPG	Natural Gas or LPG

When coal is burned, it shall not have the potential to emit more than 0.96 pounds of SO_2 per million Btu of heat input. Within 48 hours after being informed of a winter curtailment by the supplier or transporter, the owner/operator shall verbally inform the Executive Secretary of the curtailment and use of coal. The owner/operator shall also document such incidents in a report for each month in which they occur. The Executive Secretary shall also be notified of the end of the curtailment within 48 hours.

9. Fugitive emissions from the coal piles and any unpaved roads associated with these sources shall be minimized by water spraying as dry conditions warrant or as determined necessary by the Executive Secretary.

10. When coal is burned, the following conditions shall apply:

    A. The baghouses on both boilers shall be stack tested for PM_{10} and NO_x every 3 years.

    B. All boiler flue gases shall pass through a baghouse.

11. The same consignments of coal shall be used at the refinery steam plant as are used at the main power plant. If the refinery steam plant uses a different consignment of coal in

the future, that coal shall be subject to the same testing requirements as coal for the main power plant. The testing requirements are as follows:

A. Coal increments will be collected using ASTM 2234, Type I Conditions A, B, C and systematic spacing. Fuel lot size is defined as the weight of fuel consumed during three operational hours.

B. Percent sulfur content and gross calorific value of the coal on a dry basis will be determined for each gross sample using ASTM D Methods 2013, 3177, 3173, and 2015.

C. The owner/operator shall submit monthly reports to the Executive Secretary of sulfur input to the boilers. The reports shall include sulfur content, gross calorific value, and moisture content of each gross coal sample; the gross calorific value of all coal and gas; the total amount of coal and gas burned; and the running annual average sulfur input calculated at the end of each month of operation.

12. The Executive Secretary shall be notified when startup with coal burning capability occurs as an initial compliance inspection is required.

13. Annual emissions for this source (the entire refinery) are hereby established at 51.9 tons/yr for PM_{10}, 162.6 tons/yr for SO_2 and 121.0 tons/yr for NO_x.

2.b.Z Kennecott Utah Copper, Utah Power Plant, Magna

1. The approved installations shall consist of only the following emissions points:

   A. Boiler no.1 (490 mmBtu/hr)
   B. Boiler no.2 (490 mmBtu/hr)
   C. Boiler no.3 (490 mmBtu/hr)
   D. Boiler no.4 (910 mmBtu/hr)
   E. Other associated equipment

2. During the period from November 1 to the last day in February, inclusive, the following conditions shall apply:

   A. The four boilers shall use only natural gas as a fuel, unless the supplier or transporter of natural gas imposes a curtailment. The power plant may then burn coal, only for the duration of the curtailment. The Executive Secretary shall be notified of the curtailment within 48 hours of when it begins and within 48 hours of when it ends.

   B. The following limits on fuel usage shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

      1) 40 million cubic feet per day of natural gas

      2) 1370 tons per day of coal, only during curtailment of natural gas supply

   C. Except during a curtailment of natural gas supply, emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

      1) For each of boilers no. 1, 2, & 3:

         a) PM_{10} - 0.004 grain/dscf ($68^{o}F$, 29.92 in Hg)

         b) NO_x - 173 lb/hr
            336 ppmdv (measured at 3% oxygen)

      2) For boiler no. 4:

         a) PM_{10} - 0.004 grain/dscf ($68^{o}F$, 29.92 in Hg)

b) NO_x - 317 lb/hr
336 ppmdv (measured at 3% oxygen)

D. During a curtailment of natural gas supply, emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

1) For each of boilers no. 1, 2, & 3:

a) PM_{10} - 15.9 lb/hr
- 0.029 grain/dscf
(68°F, 29.92 in Hg)

b) NO_x - 278 lb/hr
- 597 ppmdv
(measured at 3% oxygen)

2) For boiler no. 4:

a) PM_{10} - 36.4 lb/hr
- 0.029 grain/dscf
(68°F, 29.92 in Hg)

b) NO_x - 637 lb/hr
- 597 ppmdv (measured at 3% oxygen)

E. Owner/operator shall provide monthly reports to the Executive Secretary showing daily total emission estimates based upon boiler usage, fuel consumption and previously available results of stack tests.

3. During each annual period from March 1 to October 31, inclusive, the following conditions shall apply:

A. The owner/operator shall use coal, natural gas, oils that meet all the specifications of 40 CFR 266.40(e) and contains less than 1000 ppm total halogens, and/or number 2 fuel oil or lighter in the boilers.

B. The following limit on fuel usage shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

50,400 million Btu per day of heat input

C. Emissions to the atmosphere from each emission point shall not exceed the following rates and

concentrations:

1) For each of boilers no. 1, 2, & 3:

   a) PM_{10} - 15.9 lb/hr
      - 0.029 grain/dscf
      (68°F, 29.92 in Hg)

   b) NO_x - 562 lb/hr
      - 1208 ppmdv
      (measured at 3% oxygen)

2) For boiler no. 4:

   a) PM_{10} - 36.4 lb/hr
      - 0.029 grain/dscf
      (68°F, 29.92 in Hg)

   b) NO_x - 796 lb/hr
      - 746 ppmdv (measured at 3% oxygen)

4. Stack testing to show compliance with the above emission limitations shall be performed for all four boilers and the following air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A for more details), and as directed by the Executive Secretary:

		Method	Retest every
A.	NO_x	7	1 year
B.	PM_{10}	201/201a	1 year

The heat input during all compliance testing shall be no less than 90% of the design rate, which is 441 MMBTU/hr for boilers 1, 2, and 3, and 819 MMBTU/hr for boiler 4.

5. Visible emissions from the boiler stacks indicated below shall not exceed the associated opacity on a 6-minute average, as measured by a CEM:

Source	Natural Gas Fuel	Coal Fuel
Boilers #1, #2 and #3	10% Opacity	20% Opacity
Boiler #4	10% Opacity	☼

☼ Prior to installation of the low-NO_x burners visible emissions from the #4 boiler stack shall not exceed 40% opacity based upon Method 9

After installation of the low-NO_x burners visible emissions from the #4 boiler stack shall not exceed 20% opacity based upon Method 9, provided that:

A. The opacity limit is applicable as defined in 40 CFR 60.11(c);

B. Kennecott fails to submit a petition as described in 40 CFR 60.11(e)(6);

C. Kennecott fails to make the demonstration required in 40 CFR 60.11(e)(7) and (8).

6. The sulfur content of any fuel burned shall not exceed 0.52 lb of sulfur per million Btu (annual running average), nor shall any one test exceed 0.66 lb of sulfur per million Btu.

A. Coal increments will be collected using ASTM 2234, Type I conditions A, B, or C and systematic spacing. Fuel lot size is defined as the weight of fuel consumed during three operational hours.

B. Percent sulfur content and gross calorific value of the coal on a dry basis will be determined for each gross sample using ASTM D methods 2013, 3177, 3173, and 2015.

C. Failure of the owner/operator to measure at least 95% of the required increments in any one month shall constitute a violation of this provision.

D. The owner/operator shall submit monthly reports of sulfur input to the boilers. The reports shall include sulfur content, gross calorific value and moisture content of each gross coal sample; the gross calorific value of all coal and gas; the total amount of coal and gas burned; and the running annual average sulfur input calculated at the end of each month of operation.

7. Natural gas consumption shall be determined by metering the gas as it is fed into the boilers with gauges, which shall be installed if necessary. Records shall be kept on a daily basis. Coal consumption shall be determined by examination of purchase records and the use of a weigh conveyor which feeds each boiler.

8. Annual emissions for this source (the entire power plant) are hereby established at 257 tons/yr for PM_{10}, 6219 tons/yr for SO_2, and 5085 tons/yr for NO_x.

2.b.AA Kennecott - Barneys Canyon Operations

1. The installations shall consist of only the following equipment located at the site:

   A. Crushers
   B. Screens
   C. Conveyors
   D. Haul Trucks
   E. Loaders
   F. Graders
   G. Bulldozers
   H. Drills
   I. Cement Silo
   J. Propane Heaters
   K. Mercury Retorts
   L. Water Trucks
   M. Lab Equipment
   N. Utility Vehicles
   O. Cranes
   P. Forklifts
   Q. Light Plants
   R. Induction Furnace
   S. Carbon Regeneration Kiln
   T. Various Small Engine Powered Mobile Equipment

2. Ore throughput shall not exceed 2,400,000 tons per 12-month period without prior approval in accordance with Subsection R307-1-3.1, UACR. Compliance with the throughput limitation shall be determined on a rolling-monthly total. On the first day of each new month, a new 12-month total shall be calculated using the previous 12 months. Records of throughput shall be kept for all periods when the plant is in operation. Records of throughput shall be made available to the Executive Secretary of the Utah Air Conservation Committee upon request, and shall include a period of two years ending with the date of the request. Throughput shall be determined by the use of weight conveyors and a daily operations log. The daily throughput shall be entered in the operations log every day.

3. Visible emissions from the following emission points shall not exceed the following values:

   A. Crushers - 10% opacity
   B. Screens - 10% opacity
   C. Conveyor transfer points - 10% opacity
   D. Cement silo - 10% opacity
   E. All fume hoods - 5% opacity

F. All propane heaters - 5% opacity
G. Unpaved roads, front-end loading, truck dumping, stockpiles, blasting, bulldozing, operations area - minimize emissions
H. Drilling - 10% opacity
I. Atomic absorption laboratory - 5% opacity
J. Cyanide mixing tank - 5% opacity
K. Carbon acid wash - 5% opacity
L. Carbon stripping - 5% opacity
M. Carbon regeneration - 5% opacity
N. Mercury retort - 5% opacity
O. Ammonium Nitrate Storage Silos - 10% Opacity
P. All other points - 20% opacity

Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9.

4. The height of the mine waste dump lift shall not exceed 500 feet. The owner/operator shall provide to the Executive Secretary for approval a method to keep opacity on active waste slopes at less than 10% opacity. Average opacity emissions from the active waste dump push slopes shall not exceed 10%. To insure that 10% opacity is not exceeded, the waste dump slopes shall be monitored for opacity level during dumping activity. If the 10% opacity limitation cannot be maintained by applying additional control measures, dumping activity shall be relocated to an alternative site where 10% opacity can be maintained. Relocation shall be performed within six (6) operating hours of an exceedance of the 10% opacity limit. Opacity observations of emissions from these sources shall be conducted in accordance with 40 CFR 60, Appendix A. Method 9.

5. The ore and waste haul roads shall be treated with magnesium chloride solution and shall be treated in accordance with the fugitive dust control plan appended to this subsection. Modifications of the fugitive dust control plan may be made with consent with the Executive Secretary without processing a new approval order. The fugitive dust control plan shall be accepted by the Executive Secretary prior to issuance of the approval order.

6. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

A. All crushers

B. All screens
C. All conveyor transfer points

The sprays shall operate whenever dry conditions warrant and to the extent necessary to keep equipment operation within an opacity limitation of 10%.

7. The following operating parameters shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

A. Bulldozing total hours of operation for all bulldozers used per 12-month period - 20,175 hours

B. Length of Melco pit haul roads - 5.0 miles

C. Length of Barneys pit haul roads - 1.4 miles

D. Length of waste dump haul roads - 1.0 miles

E. Maximum gross weight of all haul trucks - 162 tons

F. Minimum gross weight of all haul trucks - 85 tons

G. Ore truck trips per 12-month period - 90,000

H. Truck trips to mine dumps per 12-month period - 220,000

Compliance with the limitations on the bulldozing hours of operation, the ore truck trips, and the truck trips to the mine dumps shall be determined on a rolling-monthly total. On the first day of each month a new 12-month total shall be calculated using the previous 12 months.

Records of hours of operation on the bulldozing, the ore truck trips and the truck trips to the mine dump shall be kept for all periods when the plant is in operation. The records shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request. The bulldozing hours of operation shall be determined by examination of an operations log in which shall be recorded daily the bulldozing hours of operation. The entries shall include all hours of all machines operated.

The number of truck trips shall be determined by examination of an operations log in which trips shall be recorded daily. The entries shall included all truck trips to each respective destination.

8. The drills used for drilling the blast holes shall be equipped with small fabric filter units mounted on the drill carriage or otherwise connected to the drill or wet drilling shall be performed. The filter units shall be operative whenever dry air drilling is taking place.

9. The cement silo shall be equipped with a fabric type bin vent control unit. All displaced air generated from filling the silo with cement shall pass through the filter unit before being vented to the atmosphere.

10. All ore storage piles shall be sprayed with water or chemical dust suppressants as dry conditions warrant or as determined necessary by the Executive Secretary.

11. The pH of the leaching solution shall be no less than 10 at all times. The pH shall be continuously monitored. The readout for each leaching pile shall be located where an inspector can safely read the pH at any time. Continuous recording of the pH on strip charts or another similar recording device is required. The continuous monitoring system shall be subject to Subsection R307-1-4.6.4, UACR, which deals with monitoring reports. All continuous monitoring data shall be kept by the source for a minimum period of two years after the date on which emissions occurred and shall be made available to the Executive Secretary upon request.

12. The sulfur content of diesel fuel oil burned in the equipment engines shall not exceed 0.21 pound of sulfur (.026 pound of sulfur after December 1993) per million BTU heat input as determined by ASTM Method D-4294-89. (This represents 0.4% sulfur (less than 0.05% after December 1993) by weight in the fuel oil, 137,000 btu/gal, and 7.05 lb/gal). The sulfur content shall be tested if directed by the Executive Secretary. Fuel consumption shall not exceed 1,500,000 gal/yr. Fuel consumption shall be determined by mine records of oil purchased.

13. For sources which are subject to NSPS, visible emission observations which are performed during the initial compliance inspection shall consist of 30 observations of six minutes each in accordance with 40 CFR 60, Appendix A, Method 9. It is the responsibility of the owner/operator of the source(s) to supply these observations to the Executive Secretary. Emission points which are subject to NSPS shall include the following:

    A. All ore crushers

B. All ore classifying screens
C. All conveyor transfer points

14. The moisture content of the ore material shall be maintained at a value of no less than 4% by weight during handling operations. The moisture content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

15. Annual emissions for this source (the entire plant site) are currently calculated at 160 tons/yr for PM_{10}, 23 tons/yr for SO_2, 216 tons/yr for NO_x.

2.b.BB Kennecott Utah Copper - Bonneville Concentrator & Tailings Pond, Magna

2.b.BB.A Bonneville Concentrator

1. The installation shall consist of only the following emission points:

   A. Primary crusher
   B. Syntron feeder
   C. Secondary crusher
   D. Secondary crusher - Screen and conveyor
   E. Scissor belt
   F. Tertiary crusher
   G. Tertiary discharge
   H. Fine ore transfer and storage
   I. Fine ore storage (3 units)
   J. Fine ore feeder floor discharge (4 units)
   K. Other associated equipment

2. Emissions to the atmosphere from the indicated emission point(s) shall not exceed the following rates and concentrations:

   A. Primary crusher

   PM_{10} 6.2 lbs/hr 0.016 grains/dscf

   B. Syntron feeder

   PM_{10} 2.4 lbs/hr 0.016 grains/dscf

   C. Secondary crusher

   PM_{10} 5.5 lbs/hr 0.016 grains/dscf

   D. Secondary crusher - Screen and conveyor

   PM_{10} 4.8 lbs/hr 0.016 grains/dscf

   E. Scissor belt

   PM_{10} 0.6 lbs/hr 0.016 grains/dscf

   F. Tertiary crusher

   PM_{10} 4.8 lbs/hr 0.016 grains/dscf

G. Tertiary discharge

PM_{10}	4.8 lbs/hr	0.016 grains/dscf

H. Fine ore transfer and storage

PM_{10}	2.8 lbs/hr	0.016 grains/dscf

I. Fine ore storage (3 units)

PM_{10}	2.1 lbs/hr per unit	0.016 grains/dscf

J. Fine ore feeder floor discharge (4 units)

PM_{10}	1.7 lbs/hr per unit	0.016 grains/dscf

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A for more details), and as directed by the Executive Secretary:

	Method	Test Every
A. Primary crusher		
PM_{10}	201/201a	1 year
B. Syntron feeder		
PM_{10}	201/201a	3 years
C. Secondary crusher		
PM_{10}	201/201a	3 years
D. Secondary crusher - Screen & conveyor		
PM_{10}	201/201a	3 years
E. Scissor belt		
PM_{10}	201/201a	3 years
F. Tertiary crusher		
PM_{10}	201/201a	3 years
G. Tertiary discharge		
PM_{10}	201/201a	3 years

H. Fine ore transfer and storage
PM_{10} 201/201a Test if directed

I. Fine ore storage (3 units)
PM_{10} 201/201a Test if directed

J. Fine ore feeder floor discharge (4 units)
PM_{10} 201/201a Test if directed

4. Visible emissions from any point emission source associated with the installation or control facilities shall not exceed 10% opacity. Opacity observations of emissions from stationary sources shall be conducted in accordance with 40 CFR 60, Appendix A, Method 9.

5. Ore reporting to the outdoor storage pile(s) shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary.

6. The total base acreage of the outdoor storage pile(s) shall not exceed 6.0 acres.

7. The ore throughput shall not exceed the following limits:

1,700	tons per hour
12,500,000	tons per year

Compliance with the annual limitations shall be determined on a rolling monthly total. Based on the first day of each month a new 12-month total shall be calculated using the previous 12 months. Records of throughput shall be kept for all periods when the plant is in operation. Records of throughput shall be made available to the Executive Secretary or his representative upon request and shall include a period of two years ending with the date of the request. Throughput shall be determined by plant records. The records shall be kept on a daily basis.

8. Annual emissions for this source (the entire plant) are hereby established at 234 tons/yr for PM_{10}.

2.b.BB.B Kennecott Tailings Pond

1. The new peripheral discharge system shall contain four segments, each capable of providing 7,500 gallons per minute (gpm) of tailings flow. Each segment shall be attached to the existing peripheral discharge line by a total of five valves per segment. Each valve shall be capable of delivering the entire 7,500 gpm flow to the existing peripheral discharge system, along 1,500 linear feet of pipeline. The new peripheral discharge system shall consist of an eastern and western half, with each half capable of delivering 15,000 gpm. The system shall be designed for simultaneous or independent operation. A 48 inch point discharge line shall be installed. The peripheral discharge system shall have the capacity to deliver at least 30,000 gallons per minute.

2. A complete sequence through a given segment shall be considered to contain ten successive areas. The cycle time required for complete rotation of a given segment shall be four days (i.e., all interior beach areas of the pond to be wetted in four days).

3. At least 48 hours prior to each wind event that is predicted (wind gusts forecasted to exceed 25 miles per hour (mph) for more than one hour, as measured by Kennecott's station on top of the tailings pond) or for other events determined necessary by Kennecott or the Executive Secretary, Utah Air Conservation Committee (UACC), the tailings shall be redirected to those tailings pond areas most susceptible to wind erosion.

4. Magnesium chloride or other stabilization methods approved by the Executive Secretary, shall normally be reapplied to the top, middle, and lower perimeter unpaved roadways no later than May 30 of each calendar year and reapplied, as necessary, to minimize these sources of air pollution throughout the year.

   A. If the roadways become a source of significant emissions, due to future dry, spring weather conditions, the application of magnesium chloride following wet, winter months shall be done prior to May 30, the date is to be negotiated between Kennecott and the Executive Secretary, UACC.

   B. Fugitive road dust generated by: 1) dike raising construction, 2) usage of unpaved roads by traffic

prior to the required reapplication, and 3) the decrease in effectiveness of magnesium chloride, shall be stabilized by water sprays or other methods on an as-needed basis or as determined necessary and be approved by the Executive Secretary, UACC.

5. Between February 15 and November 15 of each calendar year, Kennecott shall inspect the interior surface area, unpaved roads, and exterior dike area at least every two weeks and daily when 48 hours before a wind event, wind gusts are forecasted to exceed 25 mph for more than one hour as measured by Kennecott's station on top of the tailings pond.

6. The tailings distribution system shall be operated to maximize surface wetness. No more than 50 contiguous acres or more than 5 percent of the total tailings area shall be permitted to be dry at any time, unless those areas are stabilized by vegetation or other methods of fugitive dust control approved by the Executive Secretary, UACC. Kennecott shall routinely conduct dryness grid inspections monthly. The grid inspections may be done concurrently with inspections required in condition IX.H.2.b.BB.B.5 above. If it is determined by Kennecott or the Executive Secretary, UACC that the total surface dryness is greater than 5 percent or at the request of the Executive Secretary, a dryness grid inspection schedule shall be immediately initiated by Kennecott resulting in inspections being conducted twice every five working days and reported to the Executive Secretary, UACC within 24 hours of the determination, until Kennecott measures a total surface dryness content of less than or equal to 5 percent. If Kennecott or the Executive Secretary, UACC determines that the dryness percentage is exceeded, Kennecott shall meet with the Executive Secretary, or his staff, to discuss additional or modified fugitive dust controls/operational practices and an implementation schedule for such with five working days after verbal notification by either party.

7. Exterior tailings pond areas determined by Kennecott or the Executive Secretary, UACC to be sources of excessive fugitive dust shall be stabilized through vegetation cover or other approved methods.

8. Kennecott shall schedule dike raising and associated peripheral pipe deactivation in an efficient manner so

as to minimize fugitive emissions and peripheral discharge pipeline downtime. Fugitive dust generated from disturbed areas created by dike raising, shall be stabilized by water sprays or other methods approved by the Executive Secretary, UACC. The dike raising schedule for the southern-half of the tailings pond between April 1 and November 15 shall be as follows:

A. No more than 3,000 feet of contiguous peripheral discharge pipeline may be deactivated for longer than seven working days.

B. No more than 2,500 feet of contiguous peripheral discharge pipeline may be deactivated for longer than 12 working days.

9. For interior areas that may create dust problems near the Arthur pump station, dust controls shall be implemented as follows:

A. The fresh water feed line shall be used to floor the remaining Arthur impoundments on an as-needed basis.

B. The peripheral discharge pipeline shall be used to keep beach areas wet.

C. Other controls may be requested as determined necessary by Kennecott or the Executive Secretary, UACC.

10. Alert monitoring/bureau notification.

A. Kennecott shall comply with the following tailings monitoring/bureau notification procedures:

1. Alert monitoring/bureau notification
a. DAILY BASIS

Watch the forecast for northwest winds impacting tailings area. If high winds (25 mph or greater as measured by Kennecott's station on top of the tailings pond) are forecasted within 48 hours:

(1) Contact the Bureau of Air Quality (BAQ) and coordinate the measurement of wind data.

(2) Update forecast on a 24 hour basis.

b. ALERT BASIS

If a front is near or the forecast is for wind direction from west through north at more than 25 mph wind speed for more than one hour, the procedures listed below shall be followed:

(1) Alert the BAQ immediately.

(2) Continue surveillance and coordination.

11. Fugitive dust maintenance program reporting procedures:

A. On a quarterly basis, Kennecott shall summarize the following for the Executive Secretary, UACC:

1. Documentation of the average monthly moisture content of the tailings surface area, and wind direction and speed data for days that northwesterly winds exceeded 25 mph for a period of one hour or greater during which no precipitation occurred.

2. Documentation showing tailings pond control implementations and maintenance procedures used.

3. Quarterly reports shall be submitted to the Executive Secretary, UACC within 30 days following the end of each calendar quarter.

12. Kennecott shall comply with Subsection R307-1-3.2, Utah Air Conservation Regulations.

13. Kennecott shall continue to give periodic updates, as requested by the Executive Secretary to the UACC, concerning the status of the tailings pond on an invitational basis.

14. When it is determined by Kennecott or the Executive Secretary, UACC that additional tailings dust control beyond the above should be considered or tailings pond operational problems are occurring, Kennecott shall meet with the Executive Secretary, or his staff, to discuss proposed fugitive dust controls and implementation schedule within five working days after

verbal notification by either party.

15. Dust control plans in the event of a temporary or permanent shutdown should occur as follows:

    A. Kennecott shall follow interim dust control procedures as proposed in the December 16, 1987, letter for temporary shutdowns.

    B. Kennecott shall follow the dust control procedures for closure as proposed in the July 1, 1988, Final Reclamation Plan or modified plan approved by the Executive Secretary, UACC in concurrence with the Division of Oil, Gas and Mining and other applicable state agencies.

2.b.CC LDS Hospital

1. The installations shall consist of the following equipment located at the site:

   A. Boilers No. 1 and 2 (22,000 lb steam/hr each)

      Associated Baghouses (18,000 ACFM each)

   B. Boiler No. 3 (43,000 lb steam/hr)
      Associated Baghouse (40,430 ACFM)

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   For "Summer-time" coal fired operation, during the period from March 1st through October 31st:

   A. Boiler No. 1

1.	PM_{10}	0.88 lbs/hr	.012 grains/dscf
2.	SO_2	36.0 lbs/hr	420 ppmdv
3.	NO_x	16.8 lbs/hr	274 ppmdv

   B. Boiler No. 2

1.	PM_{10}	0.88 lbs/hr	.012 grains/dscf
2.	SO_2	36.0 lbs/hr	420 ppmdv
3.	NO_x	16.8 lbs/hr	274 ppmdv

   C. Boiler No. 3

1.	PM_{10}	0.99 lbs/hr	.006 grains/dscf
2.	SO_2	70.4 lbs/hr	366 ppmdv
3.	NO_x	17.6 lbs/hr	128 ppmdv

   For any combination of boilers the arithmetic sum of the individual boiler mass limitations shall apply.

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, and IX.H.2.a.A:

	Method	Test Date
Boilers no. 1 & 2 & 3		

A.	PM_{10}	201/201a	1 year
B.	SO_2	6	Test If Directed
C.	NO_x	7	Test If Directed

4. The owner/operator shall fire natural gas in the boilers from November 1st through February 28th each season beginning in the winter season of 1992-1993. The remainder of the year coal may be fired at the discretion of the source management.

   The sulfur content of any coal or any mixture of coals burned shall not exceed 0.60 pound of sulfur per million BTU heat input as determined by ASTM Method D-3177-75. The sulfur content shall be tested if directed by the Executive Secretary. Coal consumption shall not exceed 10,467 tons/yr. Coal consumption shall be determined by maintaining sales receipts, and by monitoring the daily input of coal. Compliance with the annual limitations shall be determined for each summer season. On the first day of each March a new seasonal record shall begin, and shall continue through October 31st. Records of fuel consumption (both coal and gas) shall be kept for all periods when the plant is in operation. Records of consumption shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request.

5. Particulate captured in the control facilities shall be conveyed to the existing ash handling equipment where it shall be mixed with water to minimize emissions during disposal of the collected ash.

6. Annual emissions for this source (the entire plant) are hereby established at 6.18 tons/yr for PM_{10}, 156.9 tons/yr for SO_2, 74.2 tons/yr for NO_x.

2.b.DD LDS Welfare Square

1. The installations shall consist of only the following equipment plus any equipment not capable of producing air contaminants:

   A. Modified Keeler Boiler (Natural Gas Fired) 17,000 lb steam/hr

   B. Cleaver Brooks Boiler (Natural Gas) 150 HP

   C. Superior Boiler (Natural Gas) 250 HP

   D. 16,700 ACFM Baghouse controlling the Grain Elevator

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations and testing shall be as follows:

   A. Grain Elevator Baghouse

PM_{10}	1.20 lbs/hr	.010 grains/dscf

   B. Use 201/201a in accordance with paragraph 2.1.A and retest every 3 years.

3. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. Combined heat input (for all three boilers) shall not exceed 20,000 MMBTU per year.

   B. Annual throughput of grain shall not exceed one million tons.

   Records or operations logs of amounts of coal used and hours of operation shall be kept to determine compliance with the above limitations.

4. The owner/operator shall use only natural gas as primary fuel in the three boilers. The (large) Keeler boiler will be modified to burn natural gas or #2 fuel oil or better as back up fuel. Back up fuel oil shall not exceed 10% of the annual BTU energy required. The Keeler boiler will be permitted to burn coal if and only if both natural gas and fuel oil become unavailable. In such a case the owner/operator must notify the Executive Secretary within 48 hours. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1,

UACR. The sulfur content of any fuel oil burned shall not exceed 0.45 pounds of sulfur per million BTU heat input as determined by ASTM Method D-4294-89). The sulfur content shall be tested if directed by the Executive Secretary.

5. Annual emissions for this source (the entire plant including fugitive emissions from all grain handling operations are hereby established at 11.2 tons/yr for PM_{10}, 0.47 tons/yr for SO_2, 1.37 tons/yr for NO_x.

2.b.EE Monroc - Kearns (Cottonwood closed)

1. The installations shall consist of only the following equipment:

   A. 7 - silos concrete/flyash with baghouse bin vent type controls
   B. Concrete Batch Plant, 5 cu-yd batch
   C. Aggregate Wash Plant
   D. 3 - Cone Crushers
   E. 1 - Jaw Crushers
   F. 1 - single deck screen
   G. 1 - double deck screen
   I. Associated conveyors
   J. 2 Front-end loaders & water truck
   K. Mixer and aggregate haul trucks

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 350 ton/hr washed aggregate
   B. 300,000 ton/yr washed aggregate
   C. 80,000 cu-yd/yr concrete
   D. 300,000 ton/yr unwashed aggregate products
   E. 8 hours/day
   F. 2,000 hours/yr

3. The silos shall be pneumatically loaded with cement or flyash. The displaced air from the silos generated during filling shall be passed through a baghouse. The flow rate through the baghouse shall not exceed 1100 ACFM. The pneumatic conveyor transfer pressure shall not exceed 15.0 psig.

4. The baghouse flow rate shall be measured at the request of the Executive Secretary. The method shall be 40 CFR 60, Appendix A, Method 2.

5. The pressure of the pneumatic conveyors shall be continuously monitored with equipment located such that an operator or inspector can at any time safely read the output (continuous recording not required). The reading shall be accurate to within plus or minus 1.5 psig. The instrument shall be calibrated against a primary standard at least once every 180 days. The primary standard shall be specified by the Executive Secretary.

6. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive

emissions:

A. All crushers
B. All screens
C. All conveyor transfer points

The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitation.

7. The moisture content of the aggregate shall be maintained at a value of no less than 4.0% by weight. The silt content of the products, washed aggregate 3% and road base 10%, shall not exceed the indicated percent (%) by weight on a daily average without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

8. Records of consumption/production or throughput shall be kept for all periods when the plant is in operation. These records shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request.

9. Annual emissions for this source (the entire plant) are hereby established at 21.4 tons/yr for PM_{10}, 0.6 tons/yr for SO_2, 7.6 tons/yr for NO_x.

2.b.FF Monroc, Inc - Beck Street

1. The installations shall consist of only the following equipment:

   A. H & B asphalt plant
   B. Specialty sand plant
   C. Ballast plant
   D. Cone crusher
   E. Grizzly
   F. Screens
   G. Concrete batch plant
   H. Dozers (1), front-end loaders (6)
   I. Dragline & backhoe
   J. Conveyors and stackers
   K. Diesel engine equipment
   L. Any equipment or facilities which are not capable of producing air contaminants

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Asphalt plant stack

PM_{10}	4.22 lbs/hr	0.024 grains/dscf

   B. Specialty sands stack

PM_{10}	1.09 lbs/hr	0.016 grains/dscf

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

	Method	Retest Every
A. Stack #2		
PM_{10}	201/201a	3 year
B. Stack #3		
PM_{10}	201/201a	3 years

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-

3.1, UACR:

A. 190 tons asphalt/hr
B. 150,000 tons asphalt/yr
C. 3000 hours/yr
D. 300 ton aggregate/hr
E. 600,000 ton aggregate/yr
F. 300 ton ballast/hr
G. 500,000 ton ballast/yr

Asphalt ballast and aggregate production shall be determined by examination of weigh scale records. The records shall be kept on a daily basis when the plant is operated. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

5. The paved haul road shall be cleaned by a street vacuum equipped with a baghouse or by water flooding as necessary to minimize fugitive dust.

6. The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary. The total acreage of the storage piles shall not exceed 100 acres.

7. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

A. All crushers
B. All screens
C. All conveyor transfer points

The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitation.

8. The moisture content of the aggregate material shall be maintained at a value of no less than 4.0% by weight on a daily average without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

9. The asphalt plant baghouse flow rate shall be measured at the request of the Executive Secretary. The method shall be 40 CFR 60, Appendix A, Method 2.

10. The sulfur content of any coal or coal blend fired shall not exceed 0.6% by weight without prior approval in accordance with Subsection R307-1-3.1, UACR. The sulfur content of

the coal shall be determined if directed by the Executive Secretary using the appropriate ASTM method.

11. Annual emissions for this source (the entire pit, aggregate plant and ballast plant) are hereby established at 69.5 tons/yr for PM_{10}, 8.0 tons/yr for SO_2, 17.2 tons/yr for NO_x.

2.b.GG Morton Salt Company - 8800 West North Temple

1. The installations shall consist of only the following equipment:

   A. Stack #2, Salt Dryer Scrubber, NG Fired
   B. Stack #3, Silo Scrubber
   C. Stack #4, Pellet Forming Scrubber
   D. Stack #5, Block Plant Scrubber
   E. Stack #6, Mill Processing Scrubber
   F. Stack #7, Loadout and Bagger

2. Emissions to the atmosphere from the indicated emissions points shall not exceed the following rates and concentrations:

   A. Stack #2, Salt Dryer Scrubber, NG Fired

PM_{10}	4.50 lbs/hr	0.061 grains/dscf

   B. Stack #3, Silo Scrubber

PM_{10}	2.50 lbs/hr	0.0271 grains/dscf

   C. Stack #4, Pellet Forming Scrubber

PM_{10}	2.0	0.019 grains/dscf

   D. Stack #5, Block Plant Scrubber

PM_{10}	1.73 lbs/hr	0.038 grains/dscf

   E. Stack #6, MIll Processing Scrubber

PM_{10}	2.80 lbs/hr	0.012 grains/dscf

   F. Stack #7, Loadout and Bagger

PM_{10}	0.22 lbs/hr	0.016 grains/dscf

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following

test methods in accordance with 40 CFR 60,

Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

		Method	Retest Every
A.	Stack #2		
	PM_{10}	201/201a	3 years
B.	Stack #3		
	PM_{10}	201/201a	3 years
C.	Stack #4		
	PM_{10}	201/201a	3 years
D.	Stack #5		
	PM_{10}	201/201a	3 years
E.	Stack #6		
	PM_{10}	201/201a	2 years

For purposes of this condition SIP approval means approval of the SIP by the UACC.

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

A. 75 tons/hr (Dryer only)
B. 250,000 tons/yr (Shipped tons)

C.	Dryer Stack	#2	4500 Hr
	Silo Stack	#3	7200 Hr
	Pellet Stack	#4	7200 Hr
	Block Stack	#5	4000 Hr
	Mill Stack	#6	7200 Hr
	Bulk Stack	#7	7200 Hr

D. 126 mmscf/yr natural gas and propane as back up.

Backup propane fuel shall not exceed 10% of the total plant fuel fired per year. Salt production, hours of operation and fuel consumption shall be determined by plant records. The records shall be kept on a daily basis, hours of operation shall be determined by supervisor monitoring and

maintaining an operations log, and fuel consumption shall be determined by Mountain Fuel Company billing records and propane purchase records.

5. The venturi pressure drop obtained during any compliance test on any scrubber shall be maintained as the minimum operating pressure drop until the next compliance demonstration stack test.

   A. The scrubber venturi pressure drop shall be continuously monitored with equipment located such that an inspector can at any time safely read the output. The reading shall be accurate to within plus or minus 0.50 in. W.C.. The instrument shall be calibrated against a "U" tube manometer primary standard least once every 90 days.

6. All unpaved operational roads which are used by mobile equipment shall be sprayed with a brine solution as necessary to reduce fugitive dust.

7. The owner/operator shall use only natural gas and propane as backup fuel during periods of natural gas curtailment. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR.

8. Annual emissions for this source (the entire plant) are hereby established at 49.1 tons/yr for PM_{10}, 0.9 tons/yr for SO_2, 18.3 tons/yr for NO_x.

2.b.HH Mountain Bell, Offices emergency diesel generators

1. The installations shall consist of only the following equipment:

   A. Eight Detroit Diesel Allison Series 149 Engine-Generator Sets
   B. Uninterruptable power system
   C. Other associated equipment

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 240,000 Kilowatt-hours per year

   Records of the amount of power generated per year shall be maintained.

3. The sulfur content of diesel fuel oil burned in the equipment engines shall not exceed 0.21 pound of sulfur per million BTU heat input as determined by ASTM Method D-4294-89. (This represents 0.4% sulfur by weight in the fuel oil, 137,000 btu/gal, and 7.05 lb/gal). The sulfur content shall be tested if directed by the Executive Secretary. Fuel consumption shall be determined by company records of oil purchased and be submitted yearly to the Executive Secretary.

4. Annual emissions for this source (the entire plant) are hereby established at 0.31 tons/yr for PM_{10}, 0.46 tons/yr for SO_2, 3.90 tons/yr for NO_x.

2.b.II Mountain Fuel Supply Co. (general office)

1. The installations shall consist of only the following equipment:

   A. Five Garrett IE 831-800 natural gas fired turbine generators, four operate & one as standby

   B. One Onan 100 KW emergency generator set

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Each of the Five engines:

NO_x	3.56 lbs/hr	2.54 grams/HP-hr

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, and as directed by the Executive Secretary:

   Each of the five engines:

	Method	Test Date
NO_x	7	Test If Directed

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. The production of 16,600 Megawatt hours of electricity per year.

   Records of the amount of power generated per year shall be maintained.

5. Operation of only four of the five gas turbines, or the equivalent of 2,540 horsepower hours per hour (1,895 kW-hr/hr) shall be permitted at any given time.

6. The owner/operator shall use only natural gas as fuel in the turbine engines.

7. Annual emissions for this source (the entire plant) are hereby established at 2.5 tons/yr for PM_{10}, 1.4 tons/yr for

SO_2, 71.1 tons/yr for NO_x.

2.b.JJ Mountain Fuel - 100 South 1078 West

1. The installations shall consist of only the following equipment:

   A. Three Garrett IE 831-800 natural gas fired turbine generators
   B. One Onan 250 KW emergency generator, diesel fired
   C. Two Waukesha VRG330 NG fired compressor engines
   D. One Goder 1220 incinerator

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Each of the three Garrett IE 831-800 engines:

NO_x	3.56 lbs/hr	2.54 grams/HP-hr

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, and as directed by the Executive Secretary:

   A. Each of the three engines:

	Method	Test Date
NO_x	7	Test If Directed

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   The production of 8,300 Megawatt hours of electricity per year

5. Operation of only two of the three gas turbines, or the equivalent of 1,270 horsepower hours per hour (947 Kw-hr/hr) shall be permitted at any given time.

6. The owner/operator shall use only natural gas as fuel in the turbine engines.

7. Annual emissions for this source (the entire plant) are hereby established at 1.12 tons/yr for PM_{10}, 0.40 tons/yr for SO_2, 31.2 tons/yr for NO_x.

2.b.KK Murray City Light & Power

1. The installations shall consist of only the following equipment:

   A. 2,000 kW Fairbanks engine (engine #3), S.N. 950246

   B. 1,045 kW Worthington engine (engine #4), S.N. VO-2676

   C. 1,045 kW Worthington engine (engine #5), S.N. VO-2675

   D. 2,400 kW Nordberg engine (engine #6), S.N. 2012-1072

2. The following production/consumption limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

A.	Power generated MW*hr/yr	total	14,425
B.	Fuel Oil Consumption	150,000	gallons/yr

3. A. This source shall use natural gas as primary fuel in all fuel burning furnaces, ovens and boilers. Number 2 fuel oil or better shall be used only as a pilot fuel or backup fuel to be used during natural gas curtailments and for maintenance firing. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UCAR. Fuel consumption shall be determined by gas meter readings and oil receiving and inventory records.

   B. On the first day of each month a new 12-month rolling total emissions inventory shall be compiled. The inventory shall be based on the previous 12-month rolling total operation and the appropriate emission factors and engine settings for each engine.

   The appropriate emission factors, intake manifold pressure, cylinder exhaust temperatures, and pilot rack settings for each engine shall be established for minimum emissions operation through testing using a portable monitoring system or equivalent . The intake manifold pressure, cylinder exhaust temperatures, and pilot rack settings for each engine shall be used whenever the engine is operated.

   If the total NO_x emissions exceeds 200 tpy for the previous 12 months, the source shall submit a report of

the emissions to the Executive Secretary within 30 days. Within 90 days the source shall submit to the Executive Secretary for approval a plan with proposed specifications for the installation, calibration, and maintenance of a continuous emissions monitoring system (CEMS) for NO_x. The CEM shall be on line within 12 months following the approval of the plan.

4. Annual emissions for this source (the entire plant) are hereby established at 1.62 tons/yr for PM_{10}, 2.38 tons/yr for SO_2, 250 tons/yr for NO_x.

2.b.LL Ostler Rocky Mountain Refractory Company,

1. The installations shall consist of the following equipment located at the site:

   A. Two Dryers
   B. Two Crushers
   C. Ball Mill
   D. Concrete Screen/Mixer
   E. Cement Silo
   F. Storage Piles
   G. Material Handling Equipment

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Dryer/Crusher Baghouse Vent

PM_{10}	0.54 lbs/hr	0.016 grains/dscf

   B. Ball Mill Baghouse Vent

PM_{10}	1.74 lbs/hr	0.016 grains/dscf

   C. Screen/Mixer Baghouse Vent

PM_{10}	0.14 lbs/hr	0.016 grains/dscf

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

	Method	Retest every
A. Dryer/Crusher		
PM_{10}	201/201a	5 years
B. Ball Mill		
PM_{10}	201/201a	5 years
C. Screen/Mixer		
PM_{10}	201/201a	Test if directed

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. Clay/Barite Drying and Crushing

      1) 11 tons/hr
      2) 45,886 tons/yr
      3) 16 hours/day
      4) 4,171 hours/yr

   B. Ball Mill Grinding

      1) 11 tons/hr
      2) 45,886 tons/yr
      3) 16 hours/day
      4) 4,171 hours/yr

   C. Concrete Mixing/Screening

      1) 6.5 tons/hr
      2) 27,000 tons/yr
      3) 16 hours/day
      4) 4,171 hours/yr

5. The following operating parameter shall be maintained within the indicated ranges:

   Dryer baghouse exit temperature greater than 250°F
   They shall be monitored with equipment located such that an inspector can at any time safely read the output. The readings shall be accurate to within the following ranges:

   Plus or minus 5.0 degrees fahrenheit

6. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

   A. Spray bar #1 - A two-nozzle spray located at the top or the inclining bucket elevator #1. The elevator shall be enclosed.

   B. Spray bar #2 - A two-nozzle spray located at the transfer area in the loading chute to bucket elevator #3. The feeder chute entrance to the base of the #3 elevator pickup point shall be enclosed.

   C. Spray bar #3 - A two-nozzle spray located in the

loading chute to the screening area. The screening area shall be enclosed.

D. Spray bars #4 and #5 - One nozzle spray located in each of the discharge hoppers from the screening area.

E. Spray bar #6 - A two nozzle spray located at the transfer point from belt #2 in the transfer chute to the roll crusher #1 The entrance to chute #1 shall be enclosed.

F. Spray bar #7 - A two nozzle spray located in the discharge chute from the roll crusher #1. The roll crusher #1 shall be enclosed.

G. Additional sprays shall be installed at the following locations as determined necessity by the Executive Secretary:

1) Loading chute at belt #1
2) Discharge chute from the screen to belt #2
3) Discharge chute from the jaw crusher to elevator #1

The sprays shall operate to the extent necessary to keep the emissions from the equipment equal to or less than the opacity limitations of 2.1.B

7. The moisture content of the clay/barite shall be maintained at a value of no less than 3.0% by weight. The silt content of the product shall not exceed 10.0% by weight without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM methods.

8. The owner/operator shall use only natural gas or propane as a fuel in the dryers. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR.

9. Annual emissions for this source (the entire plant) are hereby established at 5.8 tons/yr for PM_{10}, and 3.8 tons/yr for NO_x.

2.b.MM Jack B. Parson, - 6000 West 5400 South

1. The installations shall consist of only the following equipment:

   A. Batch plant - McNeilus

   B. Cement bulker - International

   C. One loader - Cat Model 950

   D. 9 Mixers

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 150 cubic yards per hour of concrete

   B. 100,000 cubic yards per year of concrete

   C. 12 hours/day

   D. 2700 hours/yr

   Concrete production shall be determined by examination of the records of weigh scale readings which shall be maintained at the plant. The records shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

3. The loader operation road length shall not exceed 300 feet without prior approval in accordance with Subsection R307-1-3.1, UACR. The speed of vehicles on the haul road shall not exceed 5.0 miles per hour without prior approval in accordance with Subsection R307-1-3.1, UACR.

4. The haul road shall be paved and shall be cleaned at least twice a week with a street vacuum equipped with a baghouse or by water flooding.

5. Annual emissions for this source (the entire plant) are hereby established at 4.9 tons/yr for PM_{10}, 0.4 tons/yr for SO_2, 4.6 tons/yr for NO_x.

2.b.NN Jack B. Parson, - 1055 West 500 South

1. The installations shall consist of the following equipment located at the site:

   A. Batch plant - Apeco Spec Master
   B. Cement bulker - International
   C. One loader - Cat Model 950
   D. 8 Mixers

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 100 cubic yards per hour of concrete
   B. 100,000 cubic yards per year of concrete
   C. 12 hours/day
   D. 2700 hours/yr

   Concrete production shall be determined by examination of the records of weigh scale readings which shall be maintained at the plant. The records shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

3. The loader operation road length shall not exceed 150 feet without prior approval in accordance with Subsection R307-1-3.1, UACR. The speed of vehicles on the haul road shall not exceed 5.0 miles per hour without prior approval in accordance with Subsection R307-1-3.1, UACR.

4. The haul road shall be paved and shall be cleaned at least twice a week with a street vacuum equipped with a baghouse or by water flooding.

5. Annual emissions source (the entire plant) are hereby established at 6.9 tons/yr for PM_{10}, 0.4 tons/yr for SO_2, 4.6 tons/yr for NO_x.

2.b.00 Phillips 66 Company - Woods Cross

1. The installations shall consist of the following equipment:

A. (4-1a) Thermal catalytic cracking unit (TCC) furnace
B. (4-1b) TCC combustion air heater
C. (4-3) TCC Lift Air Heater / Circulation System
D. (6-1) Reformer catalytic unit furnace
E. (6-2) Reformer catalytic unit furnace
F. (6-3) Prefract.reboiler
G. (7-1) H.F. alkylation depropanizer reboiler
H. (7-2) H.F. alkylation regeneration furnace
I. (8-1) Crude furnace burning fuel gas
J. (10-2) Solvent deasphalting unit furnace
K. (11-1) Straight run gas plant dependanizer reboiler
L. (12-1) Naphtha hydrogen desulfurization furnace
M. (13-1) Isomerization reactor heater
N. (45-1) Asphalt mix and storage furnace
O. (45-2) Asphalt mix and storage furnace
P. (45-3A,B,C,&D) Asphalt storage heaters
Q. (45-4A,B,C,D,&E) Asphalt storage heaters
R. (51-4) #4 Boiler
S. (51-5) #5 Boiler
T. (51-6) #6 (CO. Boiler
U. (51-7) Kiln
V. (14-1) Diesel desulfurization unit
W. (17-1) Sulfur Unit Tailgas Incinerator
X. (9-1) Light cycle oil reactor heater
Y. (9-2) Light cycle oil stabilizer reboiler
Z. (4-4a) KVG compressor
AA. (4-4b) KVG compressor
AB. (6-4a) SVG compressor
AC. (6-4b) SVG compressor
AD. (11-2) Clark compressor
AE. (66-2) Compressor
AF. (66-2) Flare
AG. (66-1) Flare
AH. (68-1) Flare
AI. Sulfur Recovery Unit Furnaces

2. The following shall be the basis for the SO_2 emissions limitations:

A. Emissions Limitations:

Phillips 66, Woods Cross Refinery's maximum SO_2 emissions to the atmosphere shall not exceed the following:

1) 4.705 tons per day for all but three days per

month. Of this total, SO_2 emissions from all sources included under the emissions cap shall not exceed (the difference between the total number and the contribution from the TCC Unit, which is yet to be established...see the note in IX.H.2.b.OO.2.D for details) tons/day.

2) 6.656 tons per day for three days per month while running flux crude for the purpose of making asphalt. Of this total, SO_2 emissions from all sources included under the emissions cap shall not exceed (the difference between the total number and the contribution from the TCC Unit, which is yet to be established...see the note in IX.H.2.b.OO.2.D for details) tons/day. After September 1, 1992, the making of asphalt shall, if practicable, be restricted during the months of November through February, to only those days for which the State Air Monitoring Center (AMC) measures 24-hour PM_{10} concentrations below 120 $\mu g/m^3$.

The annual emission limitation for SO_2 from all sources shall be 1,762 tons per year. Of this total, the annual SO_2 emissions from all sources included under the emissions cap shall not exceed (the difference between the total number and the contribution from the TCC Unit, which is yet to be established...see the note in IX.H.2.b.OO.2.D for details) tons.

B. The following sources shall be included in the SO_2 emissions cap:

Source	Fuel
1) (4-3) TCC lift air heater / Circulation System	plant gas
2) (6-1) Reformer catalytic unit furnace	plant gas
3) (6-2) Reformer catalytic unit furnace	plant gas
4) (6-3) Reformer catalytic unit furnace	plant gas
5) (7-1) H.F. alkylation depropanizer reboiler	plant gas
6) (7-2) H.F. alkylation	

	regeneration furnace	plant gas
7)	(8-1) Crude furnace	plant gas
8)	(10-2) Solvent deasphalting furnace	unit plant gas
9)	(11-1) Straight run gas plant dependanizer reboiler	plant gas
10)	(12-1) Naphtha hydrogen desulphurization furnace	plant gas
11)	(13-1) Isomerization reactor heater	natural gas
12)	(45-1) Asphalt mix and storage furnace	plant gas
13)	(45-2) Asphalt mix and storage furnace	plant gas
14)	(45-3A,B,C,&D) Asphalt storage heaters	plant gas
15)	(45-4A,B,C,D,&E) Asphalt storage heaters	plant gas
16)	(51-4) #4 Boiler	plant gas
17)	(51-5) #5 Boiler	plant gas
18)	(14-1) Diesel desulf. unit	plant gas
19)	(9-1) Light cycle oil reactor heater	plant gas
20)	(9-2) Light cycle oil stabilizer reboiler	plant gas
21)	(4-4a) KVG compressor	natural gas
22)	(4-4b) KVG compressor	natural gas
23)	(6-4a) SVG compressor	natural gas
24)	(6-4b) SVG compressor	natural gas
25)	(11-2) Clark compressor	natural gas
26)	(66-2) Compressor	natural gas

27) Sulfur Recovery Unit Furnaces plant gas

C. SO_2 emissions for the emissions cap sources shall be determined by applying the following emission factors to the relevant quantities of fuel combusted. This shall be performed according to the following:

1) Emission Factors for the various fuels shall be as follows:

natural gas - 0.60 lb/mmscf

plant gas - the emission factor to be used in conjunction with plant gas combustion shall be determined through the use of a continuous emissions monitor which will measure the H_2S content of the fuel gas in parts per million by volume (ppmv). Daily emission factors shall be calculated using average daily H_2S content data from the CEM. The emission factor shall be calculated as follows:

(lb SO_2 / mmscf gas) = (24 hr avg. ppmv H_2S)/10^6 * (64 lb SO_2 / lb mole) * (10^6 scf / mmscf) / (379 scf / lb mole)

fuel oil - the emission factor to be used in conjunction with fuel oil combustion (during natural gas curtailments) shall be calculated based on the weight percent of sulfur, as determined by ASTM Method D-4294-89 or approved equivalent, and the density of the fuel oil, as follows:

(lb SO_2 / kgal) = (density lb/gal) * (1000 gal/kgal) * (wt.% S)/100 * (64 g SO_2 / 32 g S)

The weight percent sulfur and the fuel oil density shall be recorded for each day any fuel oil is combusted. Fuel oil may be combusted only during periods of natural gas curtailment. The sulfur content of the fuel oil shall be tested if directed by the Executive Secretary.

2) Fuel Consumption shall be measured as follows:

Natural gas consumption shall be determined by the meter totalizer which measures all natural gas supplied to the plant.

Plant gas consumption shall be metered at the amine treater.

Fuel Oil consumption shall be measured each day by means of leveling gages on all tanks which supply oil to combustion sources.

3) The equations used to determine emissions for the emission cap sources shall be as follows:

Emission Factor (lb/mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/mmscf) * Plant Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

4) Total 24-hour SO_2 emissions for the sources included in the emissions cap shall be calculated by adding the daily results of the above SO_2 emissions equations for natural gas, plant gas, and fuel oil combustion. Results shall be tabulated every day, and records shall be kept which include the CEM readings for H_2S (averaged for each one-hour period), all meter readings (in the appropriate units), fuel oil parameters (density and wt.% S, recorded for each day any fuel oil is burned), and the calculated emissions. See IX.H.2.a.M Petroleum Refineries for compliance demonstration details.

D. Individual Point Source Limitation:

SO_2 emissions limits shall be individually set for each point source not designated as being in the emissions cap. The following Non-Emissions Cap Sources shall be regulated individually for SO_2 at the following emission limits:

Point Source	lb/hr	tons/yr	ppmv
TCC Unit(s) (4-1a, 4-1b, 51-6, & 51-7)	(limits to be established through testing...see note)		
SRU Tailgas Incinerator	(limits to be established during Subsection R307-1-3.1		

review)

The SO_2 from the TCC unit shall be determined by measuring the volume of flue gas from the unit and by using EPA Test Method No. 6 for sulfur analysis.

Note: Several sets of stack tests (January 1991, February '91, and the summer of '91) shall be performed on the TCC to check the SO_2 emissions used in the PM_{10} SIP preparation. All testing shall be accomplished, and the results sent to the Executive Secretary, no later than July 15, 1991. The SO_2 emission limit and the emissions from the TCC Unit that are included in the total SO_2 inventory shall be modified as appropriate using the results of the stack tests. These stack tests shall be audited by the Bureau of Air Quality.

E. Stack testing to determine hourly, daily, and annual compliance for the "non-cap" sources described in IX.H.2.b.OO.2.D, above, shall be performed as directed in condition IX.H.2.b.OO.5 below, and in accordance with IX.H.2.a.A and IX.H.2.1.M.

F. The following sources shall not be regulated for SO_2 emissions, nor shall they be included in the emission limitation totals herein:

1) (66-2) Flare
2) (66-1) Flare
3) (68-1) Flare

3. The following shall be the basis for NO_x emissions limitations:

A. Emissions Limitations:

Phillips 66, Woods Cross Refinery's maximum NO_x emissions to the atmosphere shall not exceed 2.20 tons per day. Of this total, NO_x emissions from all sources included under the emissions cap shall not exceed 2.20 tons per day. The annual emission limitation for NO_x from all sources shall not exceed 693.0 tons. Of this total, the annual NO_x emissions from all sources included under the emissions cap shall not exceed 693.0 tons.

B. The following sources shall be included in the NO_x emissions cap:

Source	Fuel
1) (4-1a) Thermal catalytic cracking unit (TCC) furnace	natural gas
2) (4-1b) TCC combustion air heater	plant gas
3) (4-3) TCC lift air heater / Circulation System	plant gas
4) (6-1) Reformer catalytic furnace unit	plant gas
5) (6-2) Reformer catalytic furnace unit	plant gas
6) (6-3) Reformer catalytic furnace unit	plant gas
7) (7-1) H.F. alkylation depropanizer reboiler	plant gas
8) (7-2) H.F. alkylation regeneration furnace	plant gas
9) (8-1) Crude furnace	plant gas
10) (10-2) Solvent deasphalting furnace unit	plant gas
11) (11-1) Straight run gas plant dependanizer reboiler	plant gas
12) (12-1) Naphtha hydrogen desulphurization furnace	plant gas
13) (13-1) Isomerization reactor heater	natural gas
14) (45-1) Asphalt mix and storage furnace	plant gas
15) (45-2) Asphalt mix and storage furnace	plant gas
16) (45-3A,B,C,&D) Asphalt storage heaters	plant gas

17)	(45-4A,B,C,D,&E) Asphalt storage heaters	plant gas
18)	(51-4) #4 Boiler	plant gas
19)	(51-5) #5 Boiler	plant gas
20)	(51-6) #6 Boiler	plant gas
21)	(51-7) Kiln (breakdowns only)	plant gas
22)	(14-1) Diesel desulf. unit	plant gas
23)	(17-1) Sulfur Unit Tail Gas Incinerator	plant gas
24)	(9-1) Light cycle oil reactor heater	plant gas
25)	(9-2) Light cycle oil stabilizer reboiler	plant gas
26)	(4-4a) KVG compressor	natural gas
27)	(4-4b) KVG compressor	natural gas
28)	(6-4a) SVG compressor	natural gas
29)	(6-4b) SVG compressor	natural gas
30)	(11-2) Clark compressor	natural gas
31)	(66-2) Compressor	natural gas
32)	Sulfur Recovery Unit Furnaces	plant gas

C. NO_x emissions for the Emissions Cap Sources shall be determined by applying various emission factors to the relevant quantities of fuel combusted.

Boilers and Furnaces:

1) Emission Factors for the boilers and furnaces shall be as follows:

natural gas - 140 lb/mmscf
plant gas - 140 lb/mmscf
fuel oil - 120 lb/kgal

Daily natural gas consumption by all boilers and furnaces will be quantified by meters, which shall be installed if necessary, that will differentiate the flow of natural gas to the boilers and furnaces from the flow to the compressors.

Daily plant gas consumption by all boilers and furnaces will be quantified by meters, which shall be installed if necessary, that will differentiate the flow of natural gas to the boilers and furnaces from the flow to the compressors.

Daily fuel oil consumption shall be monitored by means of leveling gages on all tanks which supply combustion sources. Fuel oil consumption shall be allowed only during periods of natural gas curtailment.

The equations used to determine emissions for the boilers and furnaces shall be as follows:

Emission Factor (lb/mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/mmscf) * Plant Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

Compressors:

2) The Emission Factor for natural gas combustion in the compressor drivers shall be 3400 lb/mmscf.

Daily natural gas consumption for the compressor drivers shall be quantified by meters, which shall be installed if necessary, that will differentiate the flow of natural gas to the compressors from the flow to the boilers and furnaces.

The emissions shall then be determined using the following equation:

Emission Factor (lb/mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

3) Total 24-hour NO_x emissions for sources included in the emissions cap shall be calculated by adding

the results of the above NO_x equations for plant gas, fuel oil, and natural gas combustion. Results shall be tabulated every day, and records shall be kept which include the meter readings (in the appropriate units), emission factors, and the calculated emissions. See section IX.H.2.a.M for compliance demonstration details.

D. The following sources shall not be regulated for NO_x emissions, nor shall they be included in the emission limitation totals herein:

1) (66-2) Flare
2) (66-1) Flare
3) (68-1) Flare

4. The following shall be the basis for PM_{10} emission limitations:

A. Emissions Limitations:

Phillips 66, Woods Cross Refinery's maximum PM_{10} emissions to the atmosphere shall not exceed 0.441 tons per day. Of this total, PM_{10} emissions from all sources included under the emissions cap shall not exceed 0.021 tons per day. The annual emission limitation for PM_{10} from all sources shall not exceed 160.9 tons. Of this total, the annual PM_{10} emissions from all sources included under the emissions cap shall not exceed 7.60 tons.

B. The following sources shall be included in the PM_{10} emissions cap:

Source	Fuel
1) (4-1a) Thermal catalytic cracking unit (TCC) furnace	natural gas
2) (4-1b) TCC combustion air heater	plant gas
3) (6-1) Reformer catalytic furnace unit	plant gas
4) (6-2) Reformer catalytic furnace unit	plant gas
5) (6-3) Reformer catalytic unit	

	furnace	plant gas
6)	(7-1) H.F. alkylation depropanizer reboiler	plant gas
7)	(7-2) H.F. alkylation regeneration furnace	plant gas
8)	(8-1) Crude furnace	plant gas
9)	(10-2) Solvent deasphalting furnace	unit plant gas
10)	(11-1) Straight run gas plant depentanizer reboiler	plant gas
11)	(12-1) Naphtha hydrogen desulphurization furnace	plant gas
12)	(13-1) Isomerization reactor heater	natural gas
13)	(45-1) Asphalt mix and storage furnace	plant gas
14)	(45-2) Asphalt mix and storage furnace	plant gas
15)	(45-3A,B,C,&D) Asphalt storage heaters	plant gas
16)	(45-4A,B,C,D,&E) Asphalt storage heaters	plant gas
17)	(51-4) #4 Boiler	plant gas
18)	(51-5) #5 Boiler	plant gas
19)	(51-6) #6 Boiler	plant gas
20)	(51-7) Kiln (breakdowns only)	plant gas
21)	(14-1) Diesel desulf. unit	plant gas
22)	(17-1) Sulfur Unit Tail Gas	plant gas
23)	(9-1) Light cycle oil reactor heater	plant gas

24) (9-2) Light cycle oil stabilizer reboiler — plant gas

25) Sulfur Recovery Unit Furnaces — plant gas

C. PM_{10} emissions for the Emissions Cap Sources shall be determined by applying the following emission factors to the relevant quantities of fuel combusted in each unit. This shall be performed according to the following:

1) Emission Factors for the combustion sources will be as follows:

natural gas - 5 lb/mmscf

plant gas - 5 lb/mmscf

fuel oil - the PM_{10} emission factor for fuel oil combustion shall be determined based on the H_2S content of the fuel oil as follows:

PM_{10} (lb/kgal) = (10 * wt.% S) + 3

2) Daily natural gas consumption for each cap source will be determined by the meter(s) which measure the total amount of natural gas supplied to the emission cap sources.

Daily plant gas consumption for each cap source will be determined by the meter(s) which measure the total amount of natural gas supplied to the emission cap sources.

Daily fuel oil consumption shall be monitored by means of leveling gages on all tanks which supply fuel oil to combustion sources. Fuel oil consumption shall be allowed only during periods of natural gas curtailment.

3) The equations used to determine emissions for the boilers and furnaces shall be as follows:

Emission Factor (lb/mmscf) * Natural Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/mmscf) * Plant Gas Consumption (mmscf/24 hrs) / (2,000 lb/ton)

Emission Factor (lb/kgal) * Fuel Oil Consumption (kgal/24 hrs) / (2,000 lb/ton)

4) Total 24-hour PM_{10} emissions for the sources included in the emissions cap shall be calculated by adding the daily results of the above PM_{10} emissions equations for natural gas, plant gas, and fuel oil combustion. Results shall be tabulated every day, and records shall be kept which include all meter readings (in the appropriate units), fuel oil parameters (wt.% S), and the calculated emissions. See IX.H.2.a.M Petroleum Refineries for compliance demonstration details.

D. Individual Point Source Limitation:

PM_{10} emissions limits shall be individually set for each point source not designated as being in the emissions cap. The following Non-Emissions Cap Sources shall be regulated individually for PM_{10} at the following emission limits:

Point Source	lb/hr	gr/dscf	tons/yr
(4-3) TCC Lift Air Heater / Circ. System	35.0	0.480	153.3

E. Stack testing to determine compliance for sources described in IX.H.2.b.OO.4.D, above, shall be performed as directed in condition IX.H.2.b.OO.5 below, and in accordance with IX.H.2.a.A.

F. The following sources shall not be regulated for PM_{10} emissions, nor shall they be included in the emissions totals herein:

1) (4-4a) KVG compressor
2) (4-4b) KVG compressor
3) (6-4a) SVG compressor
4) (6-4b) SVG compressor
5) (11-2) Clark compressor
6) (66-2) Compressor
7) (66-2) Flare
8) (66-1) Flare
9) (68-1) Flare

5. Stack Testing Requirements:

The following point sources have been required to comply with various emission rates and concentrations in the paragraphs preceding. The following is summary of the testing methods and frequencies appropriate to each point source. The provisions set forth in IX.H.2.b.A apply to the testing of these listed sources.

A. (4-1a, 4-1b, 51-6, & 51-7) TCC Unit(s)

	Limitations	Test Method	Frequency
SO_2	XXXX lb/hr XXX ppmv	6	If Directed
	limits shall be established through stack testing...see the note in section 2. D. for details.		

B. (4-3) TCC Lift Air Heater / Circulation System

	Limitations	Test Method	Frequency
PM_{10}	35.0 lb/hr .480 gr/dscf	201/201a	Every 3 yrs.

C. Sulfur Recovery Unit Tail-gas Incinerator

	Limitations	Test Method	Frequency
SO_2	XXXX lb/hr XXX ppmv	CEM	Continuous
	limits shall be established through Subsection R307-1-3.1 UACR.		

6. Annual emissions for this source (the entire plant) are hereby established at 160.9 tons/yr for PM_{10}, 2,016.0 tons/yr for SO_2 (includes 136 tpy for sulfur plant being down and 118 tons for estimated flare emissions), and 693.0 tons/yr for NO_x.

2.b.PP Pioneer Sand and Gravel

1. The installations shall consist of only the following equipment:

   A. Cedar Rapids 2236 jaw crusher
   B. 45" Eljay fine head cone crusher
   C. Three deck screening plant
   D. 54" Eljay 1130 std cone crusher
   E. Conveyors
   F. 6 loaders

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 350 tons/hr of aggregate
   B. 560,000 tons/yr of aggregate
   C. 8 hours/day
   D. 1600 hours/yr

3. Water spays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

   A. All crushers
   B. All screens
   C. All conveyor transfer points

   The sprays shall operate to the extent necessary to keep the emissions from the equipment equal to or less than the opacity limitations of IX.H.2.a.B

4. The moisture content of the aggregate shall be maintained at a value of no less than 4% by weight. The silt content of the product shall not exceed 3.0% by weight without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

5. Records of consumption/production or throughput shall be kept for all periods when the plant is in operation. These records shall be made available to the Executive

   Secretary upon request, and shall include a period of two years ending with the date of the request.

6. Annual emissions for this source (the entire plant) are hereby established at 21.8 tons/yr for PM_{10}, 0.9 tons/yr for

SO_2, 9.1 tons/yr for NO_x.

2.b.QQ Salt Lake City Asphalt - 1850 North Redwood Road

1. The installations shall consist of only the following equipment:

   A. One Cedarapids asphalt plant model H 50 C
   B. One front end loader
   C. Three aggregate bins

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Asphalt plant baghouse (APBH)

   PM_{10} 4.86 lbs/hr; 0.024 grains/dscf

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see paragraph 2.1.A. for more details), and as directed by the Executive Secretary:

   A. Asphalt plant baghouse (APBH)

	Method	Retest every
PM_{10}	201/201a	3 years

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 150 tons/hr of asphalt
   B. 160,000 tons/yr of raw material
   C. 8 hours/day
   D. 1560 hours/yr

5. The moisture content of the raw material shall be maintained at a value of no less than 4.0% by weight. The silt content of the product shall not exceed 15.0% by weight without prior approval in accordance with Section R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

6. The owner/operator shall use only natural gas as a fuel in the asphalt plant. If any other fuel is to be used, an approval order shall be required in accordance with

Subsection R307-1-3.1, UACR.

7. Records of consumption/production or throughput shall be kept for all periods when the plant is in operation. These records shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request.

8. Annual emissions for this source (the entire plant) are hereby established at 5.3 tons/yr for PM_{10}, 0.1 tons/yr for SO_2, 5.7 tons/yr for NO_x.

2.b.RR Salt Lake County Asphalt - Welby Pit

1. The installations shall consist of only the following equipment:

   A. 316 Cedar Rapids crusher
   B. 317 Twin jaw crusher
   C. 320 El Jay crusher
   D. Cedar Rapids Asphalt batch plant equipped with a baghouse
   E. Water truck
   F. 7 stock piles
   G. 5 diesel powered mobile construction vehicles

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Asphalt plant baghouse (APBH)

PM_{10}	4.05 lbs/hr	0.024 grains/dscf

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

A.	Method	Retest every
PM_{10}	201/201a	5 years

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 1964 Cedar Rapids Crusher (equipment #316)

      1. 100 tons/hr
      2. 84,000 tons/yr
      3. 7 hours/day
      4. 840 hours/yr

   B. 1965 Twin Jaw Crusher (equipment #317)

      1. 100 tons/hr
      2. 84,000 tons/yr

3. 7 hours/day
4. 840 hours/yr

C. 1984 El Jay Crusher (equipment #320)

1. 100 tons/hr
2. 84,000 tons/yr
3. 7 hours/day
4. 840 hours/yr

D. Cedar Rapids Asphalt Batch Plant (equipment #300)

1. 250 tons/hr
2. 300,000 tons/yr
3. 6 hours/day
4. 1200 hours/yr

Asphalt and aggregate production shall be determined by examination of the records of weigh scale readings which shall be maintained at the plant. The records shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

5. The paved roads shall be cleaned at least twice a week with a street vacuum or by water spraying and/or chemical treatment to reduce fugitive dust, or controlled by some other means approved by the Executive Secretary. The disturbed area shall not exceed 65.0 acres without prior approval from the Executive Secretary.

6. The total storage pile acreage shall not exceed 5 acres without prior approval from the Executive Secretary. The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary.

7. Water spays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

A. All crushers
B. All screens
C. All conveyor transfer points

The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitation.

8. The moisture content of the aggregate shall be maintained at a value of no less than 4.0% by weight. The silt content of

the product shall not exceed 9.5% by weight without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

9. The owner/operator shall use only natural gas as a primary fuel in the asphalt plant. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR.

10. Annual emissions for this source (the entire plant) are hereby established at 29.3 tons/yr for PM_{10}, 0.6 tons/yr for SO_2, 12.8 tons/yr for NO_x.

2.b.SS Salt Lake Valley Sand and Gravel - point of the mountain

1. The installations shall consist of only the following equipment capable of producing air contaminants located at the site:

Concrete Batch Plant

A. Two 60 ton sand and gravel storage bins
B. One 8 yard McNeilus sand and gravel weigh hopper
C. Two 60 foot long conveyors
D. One 50 foot long conveyor
E. Two cement silos - 110,000 LB capacity each

Main Crushing & Washing Plant

A. Torgensen Scalper 4 x 16
B. Vibranetics Feeder 3 x 10
C. 50 ton sand bin with 2 Syntron Feeders
D. 40" x 20' conveyor
E. 24" x 180' conveyor
F. Power screen 4' x 8'
G. Eljay Cone crusher
H. 36" x 40' conveyor
I. 24" x 60' conveyor
J. 5' x 16' 4 deck Eljay screen equipped with spray bars
K. 44" Eagle sand screw
L. 20" x 50' conveyor
M. 24" x 60' conveyor
N. 24" x 240' conveyor
O. 24" x 200' conveyor
P. 100 ton gravel bin
Q. 24" x 100' stacking conveyor

Kiln Dryer

A. 40 MMBTU/HR kiln dryer (with cyclone and wet scrubber)
B. 30 ton trap
C. 24" x 100' conveyor
D. 20" x 140' conveyor
E. 4' x 10' dry screen enclosed in a building
F. 24" x 100' conveyor
G. 50 ton storage bin
H. 75 ton storage bin

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

A. 100 tons/hr cone crusher throughput
B. 250,000 tons/yr cone crusher throughput
C. 300 tons/hr total sand and gravel throughput
D. 800,000 tons/yr total sand and gravel throughput
E. 18 hours/day sand and gravel plant operation
F. 4752 hours/yr sand and gravel plant operation
G. 10 tons/hr of finished dryer product
H. 12,000 tons/yr of finished dryer product
I. 9 hours/day dryer plant operation
J. 1200 hours/yr dryer plant operation
K. 80 cubic yards/hr concrete production
L. 160,000 cubic yards/yr concrete production
M. 12 hours/day concrete batch plant operation
N. 2000 hours/yr concrete batch plant operation

3. The silos shall be pneumatically loaded with cement or flyash. The displaced air from the silos generated during filling shall be passed through a baghouse. One baghouse shall be used to control emissions from the two silos. The flow rate through the baghouse shall not exceed 1100 ACFM.

4. The baghouse flow rate shall be measured at the request of the Executive Secretary. The method shall be 40 CFR 60, Appendix A, Method 2.

5. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

   A. All crushers
   B. All screens
   C. All conveyor transfer points prior to the wash plant

   The sprays shall operate whenever dry conditions warrant or as necessary such that emissions shall not exceed the opacity limitation.

6. Only washed concrete sand shall be fed to the dryer. The dryer screening process shall be enclosed in a building.

7. The owner/operator shall use only number 2 fuel oil or better as a fuel in the dryer kiln. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR. The sulfur content of any fuel oil burned shall not exceed 0.25 pounds of sulfur per million BTU heat input as determined by ASTM Method D-4294-89. The sulfur content shall be tested if directed by the Executive Secretary. Fuel consumption shall not exceed 340.0 kgal/yr. Fuel consumption shall be determined by

examination of vendor sales receipts.

8. Records of consumption/production or throughput shall be kept for all periods when the plant is in operation. These records shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request.

9. Annual emissions for this source (the entire plant) are hereby established at 43.9 tons/yr for PM_{10}, 13.9 tons/yr for SO_2, 21.4 tons/yr for NO_x.

2.b.TT Savage Rock Products - 6200 South 3100 East

1. The installations shall consist of only the following equipment:

   A. 2 Screen Deck Sets
   B. Jaw Crusher
   C. Cone Crusher
   D. Conveyors, Loaders, Haul Trucks, Generator, Compressor

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 300 tons/hr, Crusher Plant
   B. 1,000,000 tons/yr
   C. 16 hours/day
   D. 3,333 hours/yr of Crusher Operations

   Records/operations log shall be maintained to demonstrate compliance with the above limitations.

3. Water spays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

   A. All crushers
   B. All screens
   C. All conveyor transfer points

   The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitation.

4. The moisture content of the construction aggregate shall be maintained at a value of no less than 4.0% by weight. The silt content of the product shall not exceed 6.0% by weight an a daily average without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

5. Annual emissions for this source (the entire plant) are hereby established at 28.5 tons/yr for PM_{10}, 1.2 tons/yr for SO_2, 14.1 tons/yr for NO_x.

2.b.UU Staker Paving and Construction Company - North Beck Street

1. The installations shall consist of only the following equipment:

   A. Asphalt Plant, H & B Model 124" X 50' recycle plant and (2) associated Baghouses

   B. Primary Impact Crusher, horizontal shaft (9209), Hazemag, Model APSE-1313-QM, S/N - APS1313 302774, 1985

   C. Vibrating Scalping Grizzly, 5' X 16' (9311), Hewitt-Robins, Model VX14, S/N (NA), 1986

   D. Vibrating Feeder, 52" X 16' (9312), Hewitt-Robins, Model VL-9, S/N (NA), 1986

   E. Secondary Impact Crusher (9211), Black-Clawson, Model 60, S/N 60B4409 78, 1983

   F. Universal Jaw Crusher, S/N 546-PGR-3042

   G. Vibrating Screen Plant (9309), El Jay, Model 6' X 20', S/N 126743F0384, 1984

   H. Vibrating Screen Plant (9313), El Jay, Model 6' X 20', S/N (NA), 1986

   I. Vibrating Screen Plant (9304), Hewitt-Robins, Model 8' X 20', S/N E560 464501, 1980

   J. Aggregate Wash Plant (9315), Cedarapids, Model 5' X 16', S/N 516-232-B6-594, 1973

   (NA) means serial numbers not assigned as of this date, equipment not yet received.

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. The H & B Asphalt Plant

1.	PM_{10}	virgin	6.71 lbs/hr	.024 grains/ dscf
2.	PM_{10}	recycle	7.83 lbs/hr	.028 grains/ dscf

3.	SO_2	61.3 lbs/hr	210	ppmdv
4.	NO_x	25.2 lbs/hr	120	ppmdv

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

   A. The H & B Asphalt Plant

	Method	Test Date
PM_{10}	201/201a	Test If Directed
SO_2	6	Test If Directed
NO_x	7	Test If Directed

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R07-1-3.1, UACR:

   A. For the Asphalt Plant:

      1. 700 tons/hr
      2. 700,000 tons/yr (including recycle mix)
      3. 150,000 tons per year recycled asphalt pavement (RAP)
      4. 2,500 hrs/yr

   B. For the Aggregate Pit:

      1. 750 tons/hr of crushing/screening production
      2. 1,250,000 tons of mined material per year
      3. 2,500 hrs/yr

   The records shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

5. No more than 250,000 cubic yards per year of material shall be blasted for mining. There shall be no more than 30 blasts per year. The area to be blasted shall be soaked with water prior to blasting. Records of blasting which show the number of blasts and the volume of material blasted shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request.

6. For drilling of blasting holes, the contractor shall use a wet collar or dry collection equipment to reduce emissions.

7. For the asphalt plant the following operating parameters shall be maintained within the indicated ranges:

   A. Temperature of the gases exiting the baghouse shall be between 240°F and 400°F

   B. Asphalt mix temperature not to exceed 310°F

   They shall be monitored with equipment located such that an inspector can at any time safely read the output. The readings shall be accurate to within the following ranges:

   A. Plus or minus 10°F
   B. Plus or minus 10°F

   All instruments shall be calibrated against a primary standard at least once every 90 days. The primary standard shall be specified by the Executive Secretary.

8. A log of product temperature shall be taken at 15 minute intervals or more often, and a current year of data shall be available for evaluation by the Executive Secretary upon request.

9. The plant shall not operate with a stack exhaust flow rate in excess of 60,000 ACFM without prior approval from the Executive Secretary in accordance with UACR R307-1-3.1.

10. The percent recycle asphalt processed in this plant shall not exceed the following:

    A. The percent by weight of recycled asphalt pavement (RAP) shall not exceed 60 - (6 X % moisture in RAP).

    B. Under no circumstances shall the percent by weight of recycle asphalt exceed 50%.

11. The sulfur content of any coal or any mixture of coals burned shall not exceed 0.60 percent by weight as determined by ASTM Method D-3177-75. The sulfur content shall be tested if directed by the Executive Secretary.

12. In addition to the requirements of this approval order, all provisions of 40 CFR 60, NSPS Subparts A and OOO apply to the following equipment:

A. Primary Crusher #9209
B. Vibrating Feeder #9312
C. Screens #9309, #9311 and #9313

All provisions of 40 CFR 60.90 (NSPS Subpart I) shall apply to the asphalt plant.

The initial opacity observations shall consist of a minimum total time of three hours (30 six minute averages) for the above sources.

13. Water sprays, chemical dust suppression sprays, or enclosures shall be installed at the following points to control fugitive emissions:

A. All crushers
B. All screens
C. All conveyor transfer points

The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitation.

14. Water shall be added to the mined material to be blasted and/or bulldozed such that before the material is moved, its moisture content, as determined by ASTM Method D-2216 on the -40 mesh portion of the sample, is greater than 4.0% by weight. This moisture content shall be maintained throughout subsequent crushing, screening and conveying circuits. The moisture content shall be tested once each day using the appropriate ASTM method. One sample shall be taken at each of the following locations:

A. The pile located where the material that is pushed off the mine bench comes to rest.

B. At each of the final product piles, samples shall be collected according to AASHTO Method T-27. Each sample shall be analyzed and recorded separately such that the moisture content at each point can be determined. Records of the moisture content shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request. If opacity observations of the sources regulated by this moisture content condition indicate visible emissions in excess of 10% opacity, more moisture shall be added until 10% opacity can be achieved. An exceedance of 10% opacity shall not be considered a violation of an opacity standard, but failure to add additional moisture in that case shall

be a violation of this condition.

15. All open areas shall be water sprayed and/or chemically treated to reduce fugitive dust, or controlled by some other means approved by the Executive Secretary. The disturbed area shall not exceed 70 acres without prior approval from the Executive Secretary.

16. Annual emissions for this source (the entire plant) are hereby established at 54.5 tons/yr for PM_{10}, 34.6 tons/yr for SO_2, 58.6 tons/yr for NO_x.

2.b.VV Staker Paving and Construction Company - 6820 West 7400 South

1. The installations shall consist of only the following equipment:

   A. Two Eljay 6' x 20" triple deck screen
   B. Two Eljay 54" Cone crushers
   C. One 775 Kw Genset
   D. Three 100' radial stackers
   E. One Eljay jaw crusher
   F. Two seven cubic yard front end loaders
   G. One D355 KDMATSU bulldozer

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:
   A. 500 tons/hr aggregate crushing and screening
   B. 250,000 tons/yr aggregate crushing and screening
   C. 12 hours/day
   D. 2160 hours/yr

   Records of consumption/production or throughput shall be kept for all periods when the plant is in operation. These records shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request.

3. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

   A. All crushers
   B. All screens
   C. All conveyor transfer points

   The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitation.

4. The moisture content of the aggregate shall be maintained at a value of no less than 4.0% by weight. The silt content of the product shall not exceed 7.5% by weight without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

5. Annual emissions for this source (the entire plant) are hereby established at 13.3 tons/yr for PM_{10}, 1.1 tons/yr for SO_2, 16.5 tons/yr for NO_x.

2.b.WW Staker Paving and Construction Company - 15290 South State Street

1. The installations shall consist of only the following equipment:
   A. Two Eljay 6' x 20" triple deck screen
   B. Two Eljay 54" Cone crushers
   C. One 775 Kw Genset
   D. Three 100' radial stackers
   E. One Eljay jaw crusher
   F. Two seven cubic yard front end loaders
   G. One bulldozer

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 500 tons/hr aggregate crushing and screening
   B. 250,000 tons/yr aggregate crushing and screening
   C. 12 hours/day
   D. 2160 hours/yr

   Records of consumption/production or throughput shall be kept for all periods when the plant is in operation. These records shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request.

3. Water spays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

   A. All crushers
   B. All screens
   C. All conveyor transfer points

   The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitation.

4. The moisture content of the aggregate shall be maintained at a value of no less than 4.0% by weight. The silt content of the product shall not exceed 8.8% by weight without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

5. Annual emissions for this source (the entire plant) are hereby established at 13.4 tons/yr for PM_{10}, 1.1 tons/yr for SO_2, 16.5 tons/yr for NO_x.

2.b.XX Union Pacific Resources - Kennecott Minerals Corporation slag pit

Grit plant

1. The installations shall consist of only the following equipment located at the site:

   A. Mining operation with dozer & loader
   B. Loader at wash plant, & feed hopper
   C. Wash plant
   D. Scalping screen
   E. Dryer (gas fired)/baghouse dust control
   F. Bucket elevator, product screens, storage bins, and loadout conveyor with baghouse dust control
   G. Bag packing building with baghouse dust control
   H. Bulk loadout for rail/trucks with baghouse dust control
   I. 35 Ton Truck (part time)

2. The following production limits for the grit plant shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 40 tons/hr
   B. 51,000 tons/yr
   C. 16 hour/day
   D. 2080 hours/yr

   Grit production shall be determined by shipping records. The records shall be kept on a daily basis.

3. Reject fines from both the Grit Plant and the Ballast Plant shall either be covered with ballast material or be sprayed with an encrusting agent as dry conditions warrant or as determined necessary by the Executive Secretary to minimize fugitive dust.

4. The owner/operator shall use only Number 2 fuel oil or better as fuel or other fuel that can demonstrate sulfur content of less than 0.45% by weight. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR. The sulfur content of any fuel oil burned shall not exceed 0.45% by weight as determined by ASTM Method D-4294-89 or, as appropriate, the sulfur content of any fuel oil burned shall not exceed 0.25 pounds of sulfur per million BTU heat input as determined by ASTM Method D-4294-89. The sulfur content shall be tested if directed by the Executive Secretary. Fuel consumption shall be determined by examination of

vendor sales receipts which shall be maintained for two years. These records shall be made available to the Executive Secretary upon request.

5. Emissions to the atmosphere from the indicated emission points shall not exceed the following rates and concentrations:

A. Dryer baghouse stack

1.	PM_{10}	0.74 lbs/hr	0.016 grains/dscf

B. Process screens baghouse stack

1.	PM_{10}	0.61 lbs/hr	0.016 grains/dscf

C. Bulk loadout rail/truck baghouse stack

1.	PM_{10}	0.31 lbs/hr	0.016 grains/dscf

D. Grit bagging building baghouse stack

1.	PM_{10}	0.1 lbs/hr	0.016 grains/dscf

6. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

	Method	Test Date
A. Dryer stack		
PM_{10}	201/201a	Test if directed
B. Process screens stack		
PM_{10}	201/201a	Test if directed
C. Bulk loadout rail/truck stack		
PM_{10}	201/201a	Test if directed
D. Grit bagging building stack		
PM_{10}	201/201a	Test if directed

7. The baghouse flow rate shall be measured at the request of the Executive Secretary. The method shall be 40 CFR 60, Appendix A, Method 2.

8. The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary. The total acreage of the storage piles and plant yard shall not exceed 4 acres.

9. Water sprays or chemical dust suppression sprays shall be installed at the following points to control fugitive emissions:

   A. All unwashed material conveyor transfer points
   B. All rejected material conveyer transfer points

   The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitation.

10. The owner/operator shall use only natural gas fuel in the dryer. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR. Fuel consumption shall not exceed 18.6 MMcf/yr. Fuel consumption shall be determined by Mountain Fuel Supply billing.

Ballast Plant

11. The approved installations shall consist of only the following equipment located at the site:

   A. Mining operation with dozer
   B. Vibrating grizzly/scalper feeder system
   C. Underpile reclaim/vibrating feeder system
   D. Primary screen deck system/cone crusher
   E. Secondary screen deck systems
   F. field and reclaim conveyors
   G. Front-end loaders
   H. Two 35 Ton Trucks
   I. One Patrol
   J. Two Bobcat loaders

12. The following production limits for the Ballast Plant shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   A. 600 tons/hr
   B. 1,248,000 tons/yr
   C. 16 hours/day Nov 1 to Feb 28

24 hours/day all other times

D. 2080 hours/yr

Ballast production shall be determined by shipping records. The records shall be kept on a daily basis.

13. Water sprays shall be installed at the following points to control fugitive emissions:

A. Point #1 Vibrating feeder
B. Point #6 Conveyor drop point from reclaim tunnel to plant feed conveyor
C. Point #11 Conveyor Discharge from crusher
D. Point #17 Transfer from field to stacking conveyors
#23 rainbird type sprinklers at top of product radial stacker conveyers
E. Any additional transfer point or screen as determined necessary by the Executive Secretary

(These points are referenced to figure #2 of the notice of intent submitted April 30, 1986)

14. The owner operator shall established a written work practice to minimize stacker drop distance to five (5) feet or less except during stockpile building. A copy of the work practice shall be submitted to the Executive Secretary. A copy shall be available to the operator in a convenient location.

15. Annual emissions for this source (the entire plant) are hereby established at 28.1 tons/yr for PM_{10}, 1.50 tons/yr for SO_2, 15.30 tons/yr for NO_x.

2.b.YY The University of Utah - Salt Lake City: (Hot Water Plant)

1. The installations shall consist of only the following equipment:

A. Boiler No. 1 (60 MMBTU/HR output)
B. Boiler No. 2 (60 MMBTU/HR output)
C. Boiler No. 3 (105 MMBTU/HR output)
D. Boiler No. 4 (105 MMBTU/HR output)
E. Boiler No. 5 (105 MMBTU/HR output)
F. Coal and ash handling systems

2. Emission Limitations and Stack Testing:

Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

For Coal Firing:

A. For each boiler No. 1, and No. 2

1.	PM_{10}	23.8 lbs/hr	0.23 grains/dscf
2.	SO_2	71.3 lbs/hr	582 ppmdv
3.	NO_x	42.6 lbs/hr	485 ppmdv

B. For each boiler No. 3, 4, and 5

1.	PM_{10}	41.6 lbs/hr	0.23 grains/dscf
2.	SO_2	125 lbs/hr	582 ppmdv
3.	NO_x	74.7 lbs/hr	485 ppmdv

For Natural Gas Firing:

A. For each boiler No. 1, and No. 2

1.	NO_x	12.2 lbs/hr	143 ppmdv

B. For each boiler No. 3, 4, and 5

1.	NO_x	75.0 lbs/hr	560 ppmdv

Stack testing to show compliance with the above emission

limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

A. Coal Firing: All (5) Boilers

	Method	Retest every
PM_{10}	201/201a	3 years
SO_2	6	Test If Directed
NO_x	7	3 years

B. Gas Firing: All (5) Boilers

	Method	Retest every
NO_x	7	3 years

3. Production Limitations:

The University of Utah shall fire natural gas in their hot water heating plant from November 1 to February 28 each season. The remainder of the year coal may be fired.

Coal consumption shall not exceed 18,730 tons per 12-month period, nor shall Natural Gas consumption exceed 490 million cubic feet per 12-month period without prior approval in accordance with Subsection R307-1-3.1, UACR. Compliance with these annual limitations shall be determined on a rolling monthly total. Based on the first day of each month a new 12-month total shall be calculated using the previous 12-months. Records of consumption shall be kept for all periods when the plant is in operation. Records of consumption shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request. Fuel consumption shall be determined by examining sales receipts.

4. Fuel Requirements:

The sulfur content of any coal or any mixture of coals burned shall not exceed 0.60 percent by weight as determined by ASTM Method D-3177-75. In addition, the sulfur content (in weight percent) of each shipment of coal shall be recorded. This information shall be made available to the

Executive Secretary upon request, and shall include a period of two years ending with the date of the request. The sulfur content shall be tested if directed by the Executive Secretary.

5. Specific Requirements:

   Henceforth, the practice of re-injecting flyash into the boilers for additional combustion shall be prohibited.

6. Annual emissions for this source (the entire plant) are hereby established at 74.3 tons/yr for PM_{10}, 219.3 tons/yr for SO_2, and 245.8 tons/yr for NO_x.

2.b.ZZ Utah Metal Works, Inc., - 805 Everett Ave. Salt Lake

1. The installations shall consist of only the following equipment:

   A. Wire Chopper and associated Baghouse and Cyclone
   B. Incinerator (for burning wire insulation)
   C. Aluminum Furnace

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Baghouse

PM_{10}	1.07 lbs/hr	.020 grains/dscf

   B. Incinerator

PM_{10}	3.02 lbs/hr	.080 grains/dscf

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

	Method	Retest every
A. Baghouse		
PM_{10}	201/201a	3 years
B. Incinerator		
PM_{10}	201/201a	3 years
C. Aluminum Furnace		
PM_{10}	201/201a	Test If Directed

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

   For the Baghouse and Incinerator:

A. 8 hours/day

B. 2,080 hours/yr

For the Aluminum Furnace:

A. 12 hours/day

B. 900 hours/yr

Records of production shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

5. The owner/operator shall use only natural gas or propane as fuel in the incinerator and in the furnace. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR.

6. The baghouse flow rate shall be measured at the request of the Executive Secretary. The method shall be 40 CFR 60, Appendix A, Method 2.

7. The particulate captured in the baghouse and cyclone shall be properly handled in order to prevent re-entrainment into the atmosphere.

8. Annual emissions for this source (the entire plant) are hereby established at 4.27 tons/yr for PM_{10}, 0.01 tons/yr for SO_2, 0.98 tons/yr for NO_x.

2.b.AAA Utah Power and Light - 40 N. 100 W.

1. The installations shall consist of only the following equipment:

   A. Two Boilers (30,000 lb steam per hour).

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Each of the two boilers:

NO_x	6.26 lbs/hr	143 ppmdv

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, and as directed by the Executive Secretary:

   A. Each of the two boilers:

	Method	Test Date
NO_x	7	Test If Directed

4. This source shall use natural gas as primary fuel in all fuel burning furnaces, ovens and boilers. Number 2 fuel oil or better shall be used only as a backup fuel to be used during natural gas curtailments and for maintenance firing. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UCAR. Fuel consumption shall be determined by gas meter readings and oil receiving and inventory records.

   The number 2 fuel oil may be used only during periods of natural gas curtailment, and for maintenance firings. Maintenance firings shall not exceed 1% of the annual plant BTU requirements. Records of fuel oil use shall be kept which shows the date the oil was fired, the duration in hours the oil was fired, the amount of fuel oil consumed and the reason for each firing.

5. Annual emissions for this source (the entire plant) are hereby established at 1.96 tons/yr for PM_{10}, 0.23 tons/yr for SO_2, 54.8 tons/yr for NO_x.

2.b.BBB Utah Power & Light - Gadsby

1. The approved installations shall consist of only the following equipment:

   A. Boiler No. 1 (726 MMBTU/HR)
   B. Boiler No. 2 (825 MMBTU/HR)
   C. Boiler No. 3 (1,155 MMBTU/HR)

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   For "Winter-time" operation, during the period from November 1st through February 28th.

   A. Boiler No. 1

NO_x	179 lbs/hr	336 ppmdv

   B. Boiler No. 2

NO_x	204 lbs/hr	336 ppmdv

   C. Boiler No. 3

NO_x	142 lbs/hr	168 ppmdv

   For "Summer-time" operation, during the period from March 1st through October 31st.

   A. Boiler No. 1

NO_x	255 lbs/hr	336 ppmdv

   B. Boiler No. 2

NO_x	290 lbs/hr	336 ppmdv

   C. Boiler No. 3

NO_x	203 lbs/hr	168 ppmdv

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, and as directed by the Executive Secretary:
   A. All Three Boilers, for each of two emission rates

(winter and summer):

	Method	Retest every
NO_x	7	2 yrs

The production rate during compliance testing for the summer-time emission limitations shall be performed at no less than 90% of the rated input heat capacity (653 MMBTU/HR for Boiler No. 1, 742 MMBTU/HR for Boiler No. 2, and 1,040 MMBTU/HR for Boiler No. 3). The production rate during compliance testing for the winter-time emission limitations shall be no less than 90% of the heat input rate correlating to the 70% capacity factor used to calculate the winter-time emission rates (460 MMBTU/HR for Boiler no. 1, 522 MMBTU/HR for Boiler No. 2, and 730 MMBTU/HR for Boiler No. 3).

4. The owner/operator shall use only natural gas as a primary fuel and number 2 fuel oil, or better, as back-up fuel in the boilers. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR. The sulfur content of any fuel oil burned shall not exceed 0.45 percent by weight as determined by ASTM Method D-4294-89. The sulfur content shall be tested if directed by the Executive Secretary. The number 2 fuel oil may be used only during periods of natural gas curtailment, and for maintenance firings. Maintenance firings shall not exceed 1 percent of the annual plant BTU requirement. In addition, maintenance firings shall be scheduled between April 1, and November 30 of any calendar year. Records of fuel oil use shall be kept which shows the date the oil was fired, the duration in hours the oil was fired, the amount of fuel oil consumed during each curtailment, and the reason for each firing. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UACR.

5. Annual emissions for this source (the entire plant) are hereby established at 61.3 tons/yr for PM_{10}, 67.7 tons/yr for SO_2, 2,983 tons/yr for NO_x. These amounts supersede those emissions that were credited to Utah Power and Light by Executive Secretary letter dated February 7, 1986. Also, these amounts are only in effect if the three boilers are capable of operating at the time the SIP is approved.

2.b.CCC Veterans Administration Medical Center

1. The installations shall consist of only the following equipment:

   A. Three Boilers (24.8 MMBTU/HR each)
   B. One Pathological Waste Incinerator

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. Any of the Three Boilers

NO_x	3.70 lbs/hr	143 ppmdv

   If more than one boiler is firing then the emission rate and concentration limitations shall be the sum of their individual limitations.

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40 CFR 51, Appendix M (see IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

   A. Boilers

	Method	Test Date
NO_x	7	Test If Directed

4. This source shall use natural gas as primary fuel in all fuel burning furnaces, ovens and boilers. Number 2 fuel oil or better shall be used only as a backup fuel to be used during natural gas curtailments and for maintenance firing. If any other fuel is to be used, an approval order shall be required in accordance with Subsection R307-1-3.1, UCAR. Fuel consumption shall be determined by gas meter readings and oil receiving and inventory records.

   The number 2 fuel oil may be used only during periods of natural gas curtailment, and for maintenance firings. Maintenance firings shall not exceed 1% of the annual plant BTU requirements. Records of fuel oil use shall be kept which shows the date the oil was fired, the duration in hours the oil was fired, the amount of fuel oil consumed and the reason for each firing.

5. The quantity of fuel oil burned shall not exceed 50,000 gal/yr. Compliance with this annual limitation shall be determined on a rolling-monthly total. On the first day of each month a new 12-month total shall be calculated using the previous 12 months. Records of consumption shall be kept for all periods when the plant is in operation. Records of consumption shall be made available to the Executive Secretary upon request, and shall include a period of two years ending with the date of the request. Fuel oil consumption shall be determined by evaluating sales receipts.

6. The following operating parameters shall apply to the pathological incinerator:

   A. The charge rate shall not exceed 250 lbs/hr

   B. The temperature in the secondary chamber shall be maintained at no less than 1,800^{o}F and at no greater than 2,000^{o}F

   Records of the quantities of refuse incinerated and the hours of operation shall be kept on a daily basis and shall be made available to the Executive Secretary upon request. They shall include a period of two years ending with the date of the request. Refuse destruction shall be determined by weighing the material before its disposal. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log. The temperature of the secondary chamber shall be monitored by equipment located such that an inspector can at any time safely read the output. The reading shall be accurate to within plus or minus 50^{o}F. The instrument shall be calibrated against a primary standard at least once every 90 days. The primary standard shall be specified by the Executive Secretary.

7. Annual emissions for this source (the entire plant) are hereby established at 0.50 tons/yr for PM_{10}, 0.04 tons/yr for SO_2, 9.88 tons/yr for NO_x.

2.b.DDD Wolff Gravel Products, Inc - North Beck Street

1. The approved installations shall consist of only the following equipment:

A.	1 - D-155 bulldozer	S/N 16121
B.	1 - WA450 loader, 4.5 c.y.	S/N 10091
C.	1 - FR20 loader, 4.5 c. y.	S/N 80C145
D.	1 - Kolberg screen deck	S/N 1402 427 78 2
E.	1 - Feeder-dozer trap	S/N 1324 124 PDT 78
F.	1 - generator set, 50 KW	
G.	Associated conveyors	

2. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

A. 300 tons/hr
B. 300,000 ton/yr
C. 16 hours/day
D. 4,000 hours/yr

Aggregate production shall be determined by shipping records. The records shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

3. The haul road length shall 0.3 miles without prior approval in accordance with Subsection R307-1-3.1, UACR. The speed of vehicles on the haul road shall not exceed 10 miles per hour without prior approval in accordance with Subsection R307-1-3.1, UACR.

4. All open areas shall be water sprayed and/or chemically treated to reduce fugitive dust, or controlled by some other means approved by the Executive Secretary. Control is required at all times (i.e. 24 hrs/day) including weekends and holidays until such time as the pit has been reclaimed and the top soil has been replaced. The disturbed area shall not exceed 28.8 acres without prior approval from the Executive Secretary.

5. The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary. There shall be only 8 storage piles, and the total acreage of the storage piles shall not exceed 2.5 acres.

6. Water sprays or chemical dust suppression sprays shall be

installed at the following points to control fugitive emissions:

A. All screens
B. All conveyor transfer points

The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitation.

7. The moisture content of the road base shall be maintained at a value of no less than 4.0% by weight. The silt content of the product shall not exceed 6% by weight on a daily average without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

8. The water holding tank and spray system shall be installed and operated to the extent that sufficient moisture is added to the mined material prior to mining that the opacities designated in paragraph 4 shall not be exceeded.

9. Annual emissions for this source (the entire plant) are hereby established at 3.30 tons/yr for PM_{10}, 0.30 tons/yr for SO_2, 3.40 tons/yr for NO_x.

2.b.EEE W.W. & W.B. Gardner Construction Company - Beck Street

1. The installations shall consist of only the following equipment plus any equipment not capable of producing air contaminants:

   A. At the Victory Road Aggregate Pit

      Cedar Rapids 2236 Jaw Crusher

      Eljay 54" Cone Crusher

      Barmac Impact Crusher

      (2) Cedar Rapids 5' X 16' Triple Deck Screens

      (all) Associated Conveyors

      (1) Generator Set

      (1) Bulldozer

      (1) Front End Loader

   B. At the Asphalt Plant

      Cedar Rapids model 88-28 Drum Mix Asphalt Plant

      Baghouse

      (1) Front End Loader

2. Emissions to the atmosphere from the indicated emission point shall not exceed the following rates and concentrations:

   A. The Cedar Rapids Asphalt Plant

1.	PM_{10}	6.10 lbs/hr	0.024 grains/dscf
2.	SO_2	12.0 lbs/hr	40.7 ppmdv
3.	NO_x	9.90 lbs/hr	46.6 ppmdv

3. Stack testing to show compliance with the above emission limitations shall be performed for the following emission points and air contaminants, as determined by the following test methods in accordance with 40 CFR 60, Appendix A, 40

CFR 51, Appendix M (see IX.H.2.a.A. for more details), and as directed by the Executive Secretary:

A. The Cedar Rapids Asphalt Plant

		Method	Test Date
1.	PM_{10}	201/201a	Test If Directed
2.	SO_2	6	Test If Directed
3.	NO_x	7	Test If Directed

4. The following production limits shall not be exceeded without prior approval in accordance with Subsection R307-1-3.1, UACR:

A. For the Asphalt Plant:

1. 275 tons/hr
2. 250,000 tons/yr
3. 2,500 hrs/yr

B. For the Aggregate Pit:

1. 300 tons/hr of crushing/screening production
2. 300,000 tons of mined material per year
3. 2,500 hrs/yr

Asphalt, concrete and pit production shall be determined through the use of weigh scales and recording of the weights. The records shall be kept on a daily basis. Hours of operation shall be determined by supervisor monitoring and maintaining an operations log.

5. For the asphalt plant the following operating parameters shall be maintained within the indicated ranges:

A. Temperature of the gasses exiting the baghouse not to exceed 300°F
B. Asphalt mix temperature not to exceed 310°F
C. Asphalt oil temperature not to exceed 330°F

They shall be monitored with equipment located such that an inspector can at any time safely read the output. The readings shall be accurate to within the following ranges:

A. Plus or minus 10°F
B. Plus or minus 10°F
C. Plus or minus 10°F

All instruments shall be calibrated against a primary standard at least once every 90 days. The primary standard shall be specified by the Executive Secretary.

6. The air to cloth ratio of the baghouse shall not exceed 5.5:1 when operating the plant. At least three baghouse modules shall be used when operating with a stack exhaust gas flow rate of up to 45,000 ACFM. Four modules shall be used when operating at stack exhaust gas flow rates between 45,000 AND 60,000 ACFM. The plant shall not operate with a stack exhaust flow rate in excess of 60,000 ACFM without prior approval from the Executive Secretary in accordance with Subsection R307-1-3.1 UACR.

7. The sulfur content of any coal or any mixture of coals to be burned shall not exceed 0.60 percent by weight as determined by ASTM Method D-3177-75. The sulfur content shall be tested if directed by the Executive Secretary.

8. This plant is approved for asphalt production using 100% virgin materials only. The use of this plant to produce recycle asphalt products shall require approval of the Executive Secretary in accordance with Subsection R307-1-3.1, UACR.

9. Water sprays, chemical dust suppression sprays, or enclosures shall be installed at the following points to control fugitive emissions:

   A. All crushers
   B. All screens
   C. All conveyor transfer points

   The sprays shall operate to the extent necessary to keep the equipment operation within the opacity limitations established.

10. Water shall be added to the mined material (to be bulldozed) such that before the material is moved, its moisture content, as determined by ASTM Method D-2216 on the -40 mesh portion of the sample, is greater than 4.0% by weight. This moisture content shall be maintained throughout subsequent crushing, screening and conveying circuits. The silt content of the product shall not exceed 15% by weight on a daily average without prior approval in accordance with Subsection R307-1-3.1, UACR. The moisture and silt content shall be tested if directed by the Executive Secretary using the appropriate ASTM method.

11. All open areas shall be water sprayed and/or chemically treated to reduce fugitive dust, or controlled by some other means approved by the Executive Secretary. Fugitive dust shall be limited to the opacity limitation. The disturbed area shall not exceed 35 acres without prior approval from the Executive Secretary.

12. The storage piles shall be watered to minimize generation of fugitive dusts as dry conditions warrant or as determined necessary by the Executive Secretary. The total acreage of the storage piles shall not exceed one acre.

13. Annual emissions for this source (the entire plant) are hereby established at 24.1 tons/yr for PM_{10}, 6.19 tons/yr for SO_2, 13.0 tons/yr for NO_x.